

# Alabama Social Indicators Study

## Demand and Needs Assessment Studies: Alcohol and Other Drugs Technical Final Report

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# EXECUTIVE SUMMARY

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## INTRODUCTION AND LITERATURE REVIEW

In 1999, the Alabama Department of Mental Health and Mental Retardation, Substance Abuse Services Division (SASD) received a federal contract from the Center for Substance Abuse Prevention (CSAP) to conduct a prevention needs assessment. With this contract, Alabama became 1 of 19 States participating in CSAP's State Needs Assessment Program. The program gave States the opportunity to thoroughly assess their need for prevention services, using a methodological framework developed by CSAP and early participants in the program. The methodology centered on three studies: a survey of youth in school, a social indicator study, and a community resource assessment. This technical final report pertains to the second study, the social indicators study. Social indicators are archival, county-level data (e.g., juvenile arrest data; number of alcohol sales outlets) that are collected by various agencies (e.g., U.S. Census; Alabama Criminal Justice Information System). While social indicators should not be the only resource for substance use and risk and protective factor prevalence data, they have been demonstrated to exhibit predictive validity and provide more objective data than self-report surveys typically do.

The framework of prevention needs assessment programs has been developed around research conducted by Hawkins and associates (e.g., Hawkins, Catalano, & Miller, 1992), which evolved into a risk and protective factor model of substance abuse that categorized variables into community, family, school, and peer/individual domains. Risk factors are those variables that increase a person's likelihood of using/abusing substances (e.g., peer substance use; poor family discipline). Protective factors (e.g., opportunities for pro-social involvement; familial attachment), on the other hand, are characteristics or activities that mitigate or buffer against the harmful effects of risk factors. Research suggests that the combined magnitude of risk and protective factors can partially predict substance use outcomes.

Although social indicators only recently have been used to measure prevention needs, there is an extensive history of their application in the related fields of treatment needs and mental health needs assessments. Social indicators may provide direct (e.g., drunk-driving crashes) or indirect (e.g., poverty) proxy measurements of risk or protective factors. In general, however, it has been difficult to integrate clearly defined protective factors or buffering effects into social indicator research. Although risk and protective factors should be incorporated into an integrative model, research in this area has been hampered by the limited availability of indicators for protective factors. Also, modeling the buffering effects of protective factors sometimes requires path modeling, which is more commonly used on individual-level data, rather than the aggregate-level (e.g., county-level) data typically analyzed in social indicator studies. Additional research should determine both the indicators and methods for incorporating protective factors into what are now predominantly risk models.

## **METHODOLOGY**

### **Indicator Selection**

CSAP provides a list of validated archival indicators to all States participating in the State Prevention Needs Assessment program. We collected data for all indicators on the list. In addition, we collected data on the rates of church and youth organizations. These measures were intended to measure community opportunities for pro-social involvement, an important protective factor.

### **Data Collection**

All data from this study come from secondary sources. Dr. Donald Bogie, Director of the Center for Demographic Research at Auburn University Montgomery, collected the majority of the data through formal requests to the State agencies that own the data sets. Data collection began during the first year of the project and lasted several months, since many indicators were not immediately available. A second wave of data collection was completed during the second year in order to obtain indicators from more recent years. As soon as an indicator was available, we reviewed the data and contacted the publishing agencies regarding any suspicious or missing values. An administrative assistant then entered the data under the supervision of the investigator.

### **Quality Control**

We took many steps to ensure data quality. The project manager was responsible for all programming changes made to the data. All changes were documented in a separate data manual. The social indicator data was housed in both Excel and SPSS databases on our secure server. The server was backed up each night, and the backup tape was housed in a locked safe.

In order to prepare the data for analysis the data was imported into SPSS. The data manager was responsible for all variable name changes and data importing procedures, which were documented in a data manual. All SPSS programs were written and archived so that operations made to the data could be duplicated at a later date. In order to control for differences in population size, rate variables were created. Each rate variable was created by dividing the original variable by the appropriate population and multiplying by 100,000. Corresponding labels were also created to ensure complete understanding of the variable during analyses.

### **Methods Used to Answer Research Questions**

The overarching purpose of this report is to provide information useful to the State for providing prevention services using valid and reliable data. We conceptualized several research questions centering on a step-by-step, empirical evaluation of the validity of our data and the validity of common theoretical constructs used in conceptualizing, categorizing, and summarizing the data. Once these questions were answered, we used the most parsimonious and valid methods to evaluate risk and protection.



*Research question 1: How reliable are the indicators?*

We assessed reliability using the most recent three years up to and including the year 2000. The years 1998-2000 were used for the majority of the indicators. Indicator reliabilities were assessed using two different methods: 1) Cronbach's Alpha (standardized) and 2) an estimate of reliability using the laws of path analysis described in detail by Heise (1969).

*Research question 2: Is it possible to construct valid indices measuring risk and protection for each of the risk and protective factors in the CSAP model of risk and protection?*

In order to combine individual indicators into valid indices of risk and protection, the indices must demonstrate convergent and divergent validity (Campbell and Fiske, 1959). We used a Modified Multitrait-Multimethod Matrix to assess convergent and divergent validity in this model. In the matrix, indicator reliabilities over time had to be higher than all correlations between indicator pairs and indicators within the same factor had to correlate with each other more than they correlated with indicators outside of the factor. Violations of these criteria would indicate that the model grouped indicators that were less related to each other than they were to other variables. These violations would mean that indices were not valid.

*Research question 3: Is it possible to construct valid indices measuring risk and protection for each of the four domains in the CSAP model of risk and protection?*

States in the CSAP Prevention Needs Assessment Program typically categorize risk and protective factors into four domains: family, peer/individual, community, and school. We investigated the validity of indices created by combining indicators from each domain. First, we assigned a domain to each indicator. We then tested for validity using the methods employed in answering question 2. For this research question, the criterion was that indicators within the same *domain* had to correlate with each other more than they correlated with indicators outside their domain. The implications discussed in the previous section on question two apply to violations of these criteria.

*Research question 4: Is it possible to construct valid indices measuring overall risk and overall protection?*

The method for creating indices was contingent upon the results of research question 3. If the Modified Multitrait-Multimethod Matrix supported the use of domains by demonstrating convergent and divergent validity between them, domain indices would first be created, and a linear combination of the domain indices would be used to construct overall indices of risk and protection. In this way, each domain would be weighted equally in the summary index rather than each indicator.

As discussed in the results section, the Modified Multitrait-Multimethod Matrix did not support the use of domains. In light of this finding, we conducted an exploratory factor analysis. The analysis revealed stable factors. We then tested these indices for predictive validity by regressing them to the prevalence rates among youth of risk gathered from the Alabama Student Survey on Risk and Protective Factors (Alabama Department of Mental Health and Mental Retardation Substance Abuse Services Division, 2003). The average number of risk scales for which youth were “at risk” was aggregated by county separately for both 6<sup>th</sup> and 10<sup>th</sup> graders. Regression models used the extracted risk factor scores, a protection indicator, and the interaction of the risk factor and protection scores to predict 6<sup>th</sup> and 10<sup>th</sup> graders’ risk levels. Two separate pairs of regressions were conducted, for a total of four regressions. The pairs were composed of two regressions, one including the youth group rate as the protective indicator and the other including the churches rate as the protective indicator. One pair of regressions was conducted for each grade (6<sup>th</sup> and 10<sup>th</sup>).

*Research question 5: What is the geographic distribution of social indicators in Alabama?*

We used two techniques to examine the geographic distribution of risk and protective factors. First, we ranked counties on each reliable indicator. Tables with the county rankings appear in Appendix C. Since this study was unable to validate the CSAP classification of risk factors, the tables are organized by the type of data. The data types are:

- Availability of Substances
- Drug and Alcohol Use in the Community
- Education
- Family Characteristics
- Socio-Economic Characteristics
- Crime
- Voting
- Protective Factors

Rankings tables, while useful for comparing counties, do not provide insight on the geographic patterns in the data. Maps, however, provide an excellent visual representation of geographic patterns. For this study we mapped each reliable indicator

(see Appendix D). The mapping software divided the data for each indicator into five categories with equal ranges. Each category was assigned a shade, with darker shades representing higher rates. Counties that are in metropolitan statistical areas have thicker borders than counties in non-metropolitan statistical areas in order to highlight any possible effect of urbanicity.

*Research question 6: Which science-based prevention programs are recommended based on the social indicator data?*

Using information on need gleaned from the social indicator data, we developed tables to recommend science-based programs. Prevention programs were selected from the Western Center for Application Technology's (CAPT) list of best practices. To match social indicators with the most appropriate programs, we reviewed a brief description of each program. We deemed a program to match a particular social indicator if it met one of two criteria. The first criterion was that the program was shown to reduce the behaviors reflected by the indicator. The second criterion was that the program was designed for or adapted to the specific needs of the target population associated with the indicator.

To help planners prioritize indicators and programs, we created a table showing the three most "problematic" indicators for each county. We computed standardized scores (z-scores) for each social indicator with at least one matching program. The three social indicators with the most extreme z-scores were labeled as the most problematic. These indicators are displayed in the table along with the programs recommended for each indicator. Planners can use this table, which appears in the results section of this report (see Table 5), to set priorities for specific science-based programs.

## **RESULTS AND FINDINGS**

### **Reliability of Indicators**

Exactly 22 of the indicators tested for reliability exceeded the minimum criteria for both Cronbach's standardized alpha and Heise's estimate of temporal reliability. Ten of the indicators did not meet either one or both criteria. Homicide rates failed to pass the criterion for Cronbach's Alpha. Juvenile arrest rates for violent crimes, juvenile birth rates, event drop out rates, and rates of drop-outs prior to ninth grade failed to pass the criterion for Heise's method. Arrest rates among youth aged 10 to 14 for vandalism and arrest rates among youth aged 10 to 14 for alcohol-related offenses also failed to pass Heise's criterion. Juvenile suicide rates, alcohol-related traffic fatality rates, and rates of pregnant women in substance abuse treatment rates failed both tests of reliability.

### **Indices Based On Risk Factors**

The standardized Cronbach's Alphas were used as the estimates of reliability for indicators that were compared to the inter-item correlations. A total of only 3 of the possible 713 comparisons (22 indicators with reliability estimates x 31 inter-item correlations between those indicators and all other indicators), or 0.4% represented violations of the assumption that reliabilities would be higher than inter-item correlations.

This represented an acceptable rate of violation, allowing us to continue to test the convergent and discriminant validity of the factors. The test of convergent and divergent validity revealed that more than 20% of the inter-factor and intra-factor correlation comparisons violated the assumptions required for validation. As a result, the construction of factor summary measures following this structure was not appropriate.

### **Indices Based On Domains**

A total of 42.5% of the inter-domain and intra-domain correlation comparisons violated the assumptions necessary to validate this model. Thus, there is little evidence to suggest validity among the domains. As a result, the construction of domain summary measures following this structure was not appropriate.

### **Indices Of Overall Risk And Protection**

We attempted to create indices of overall risk and protection using factor analysis, which combines groups of variables into a number of factors based on their correlations with one another. We created three indices of risk using a three-factor model with varimax rotation. We then attempted to verify these indices of risk by regressing them, along with two of our indicators of protection, against measures of risk derived from the youth survey data. None of the regression models were significant. We concluded that none of the extracted factors, protective indicators, or their interactions had predictive validity in terms of youth risk for substance use.

### **Geographic Distribution Of Risk And Protective Factors**

We ranked counties on each indicator. Tables with the county rankings appear in Appendix C of this report and in a recently published chart book (see Appendix E). The tables are organized by the type of data.

Rankings tables, while useful for comparing counties, do not provide insight on the geographic patterns in the data. Maps, however, provide an excellent visual representation of geographic patterns. We mapped each reliable indicator. The maps appear in Appendix D. The mapping software divided the data for each indicator into 5 categories with equal ranges. Each category was assigned a shade, with darker shades representing higher rates. To capture the effect of urbanicity, counties that are in metropolitan statistical areas have thicker borders than counties in non-metropolitan statistical areas.

Inspection of the maps reveals that the indicators did not all follow the same geographic pattern. Some indicators appear to follow a north-south pattern, while others follow an east-west pattern. Other indicators have no discernable directional pattern. To explain the variation in patterns, we compared these indicators to measures of race, median income, urbanicity, and whether alcohol could be sold in the county. The findings for each indicator are summarized in the paragraphs below. The indicators are organized by data type.

### *Availability of Substances*

The counties with the most *Alcohol Sales Permits* per 100,000 people were predominately in the southern half of the State, and those with the least were mainly in the northern half of the State.

Counties with the highest rate of *Tobacco Sales Permits* were generally located in the southern area of the State. Six of the counties with the lowest rates of permits were metropolitan statistical areas, while the other four border metropolitan statistical areas.

Eight counties were ranked among the highest ten in both Alcohol Sales Permits and Tobacco Sales Permits.

### *Drug and Alcohol Use in the Community*

Nine of the highest counties on *Adult Alcohol-Related Arrest* rates (Marshall, Colbert, Jackson, Limestone, Morgan, Franklin, Walker, Marion, and Randolph) were actually either dry counties without wet municipalities or scored among the ten lowest in Alcohol Sales Permits. Similarly, Choctaw, Greene, Perry, and Wilcox counties all were in the ten highest for Alcohol Sales Permits, but were in the ten lowest in terms of Adult Alcohol Related Arrests. These results suggest that more than the simple availability of alcohol is contributing to Adult Alcohol-Related Arrests.

Rates for *Adult Drug-Related Arrests* appeared to be highest in Houston and in several counties north of Houston.

Rates of *Adult Drunk Driving Arrests* appeared to be lower in dry counties, although there were exceptions. Most of the counties with the lowest rates were located in the western portion of the State.

The counties with the highest rates of *Adults in Substance Abuse Treatment* generally corresponded to those counties that had substance treatment facilities.

Metropolitan statistical areas (MSA) generally had higher rates of *Juvenile Alcohol-Related Arrests*, although there were exceptions. Counties with higher proportions of minorities had lower rates, including those that were in metropolitan statistical areas.

Metropolitan statistical areas consistently had the highest rates for *Juvenile Drug-Related Arrests* with one exception, Shelby County. Shelby County differs most dramatically from other counties in terms of income, having the highest median income. In addition, dry counties generally had the lowest rates.

## *Education*

Seven of the ten counties with the highest rates of *Adolescents Without a High School Diploma* were in the northern part of the State, while counties with the lowest dropout rates were scattered throughout Alabama.

Metropolitan statistical areas had the lowest rates of *Adults Without High School Diplomas*.

## *Family Characteristics*

*Adolescent Pregnancy* rates were higher in southern parts of the State and lower in metropolitan statistical areas, except for Montgomery.

Rates of *Children in Foster Care* did not appear to follow any geographic pattern.

The rate of *Children Living Away from Parents* most closely followed the racial profile of the county. Counties with high proportions of minorities generally had higher rates. None of the counties with the top ten highest rates were metropolitan statistical areas (MSAs), while five of the ten lowest were MSAs.

*Divorce* rates tended to be higher in MSAs and across the north and southeast. Counties with larger proportions of minorities tended to have lower Divorce rates, while lower income counties with lower proportions of minorities had higher rates of Divorce.

Metropolitan statistical areas tended to have lower rates of *Single-Parent Households*, with the exception of Jefferson and Montgomery.

## *Socio-Economic Characteristics*

The rate of *Food Stamp Recipients* generally followed the median income for the county.

Like Food Stamps, the rate of *Free and Reduced Price Lunches* appeared to follow income. That is, counties with higher median incomes had lower rates. A notable exception to this pattern is the observation that counties with lower median incomes that had lower proportions of minorities also evinced lower rates of Free and Reduced Price Lunches.

The trend in *Migration into the County* is for people to migrate out of counties with large cities and into the surrounding area. This effect is most pronounced in Jefferson County.

*New Home Construction* rates were highest in metropolitan statistical areas, but not necessarily for those that had the highest rates of Migration into the County. It appears that New Home Construction is most closely tied to high median incomes.

The rate of *Renting Households* was most closely tied to the location of metropolitan statistical areas, in particular those with large cities.

Participation in the *Temporary Assistance for Needy Families* program tended to be higher in the southern parts of the State, with Baldwin County as a notable exception.

*Unemployment* rates were lowest in metropolitan statistical areas and highest in lower income counties with higher proportions of minorities. Lower income counties with high proportions of minorities had higher Unemployment rates than lower income counties with low proportions of minorities.

### *Crime*

*Arrests for Family Offenses* did not appear to have any discernable geographic pattern.

*Prisoner* rates do not seem to vary by median income, race, geographic location, wet/dry or metropolitan statistical area status. They also were not well predicted by having correctional facilities or work release programs in the county.

*Adult Property Crime Arrest* rates were highest in metropolitan statistical areas and lowest in dry, non-metropolitan counties.

*Adult Violent Crime Arrest* rates were lower in the northern dry counties and higher in lower income counties with a high proportion of minorities.

*Juvenile Curfew, Vandalism, and Disorderly Arrests* rates were highest in the metropolitan statistical areas and lowest in dry counties.

*Rates for Juvenile Property Crime Arrests* were highest in metropolitan statistical areas and lowest in the northern dry counties.

Rates of *Property Crime Arrests for Juveniles Aged 10 to 14* followed a geographic pattern similar to that of Juvenile Property Crime Arrests. The rates were highest in metropolitan statistical areas and lowest in the northern dry counties.

### *Voting*

The rate of *Voters* was highest in the southwest and lowest along the eastern border.

### *Protective Factors*

*Church Organizations* were mostly densely distributed across the southern part of the State.

*Youth Organizations* were most densely distributed in the south, although this effect was less strong than with Church Organizations.

## **Recommended Programs**

Certain science-based programs were recommended more frequently throughout the State than others. The Nurturing Program and the Quantum Opportunities Program were recommended for 81% of Alabama's counties. Project PATHE and Project STATUS were the second most popular programs and were recommended for 57% of the State's counties. Their frequent recommendation due to the fact that these two programs matched a number of indicators related to dropping out and delinquency.

Two programs were recommended in 40% to 45% of Alabama's counties. Both programs address underage and adult drinking. Challenging College Alcohol Abuse was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking was recommended in 40% of the counties. These results point to the need to address drinking problems in many of Alabama's counties.

Ten programs appear on the list of recommended programs in 30% to 39% of Alabama's counties. Seven of these programs aim to decrease juvenile delinquency and problem behaviors. The seven programs are: Functional Family Therapy, Positive Action, Parents Who Care, Project SUCCESS, Early Risers, the Adolescent Transitions Program, and Brief Strategic Family Therapy. With the exception of Brief Strategic Family Therapy, which is designed only for African-American and Hispanic youth, these programs are appropriate for many different target populations.

Three of the ten programs recommended in 30% to 39% of the counties do not adhere to one theme. Brief Alcohol Screening and Intervention for College Students was recommended for 36% of the counties, although it may not be appropriate for counties with no colleges or universities. Raising a Thinking Child, designed for low income mothers, was also recommended for 36% of the counties. Finally, Protecting You/Protecting Me was recommended 33% of the time. This program helps youth avoid riding with a drinking driver.

A variety of programs were recommended for 20% to 29% of the counties. The Nurse-Family Partnership, a program for low income and first time mothers, was recommended in 28% of the counties. Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress was recommended in 25% of the counties. This program works with victims of crime and abuse, as well as people exposed to high amounts of crime in their neighborhood.

Two school-based programs appeared in Table 5 for 25% of the counties. The first program, Olweus Bullying Prevention not only prevents bullying in school but also reduces incidences of anti-social behavior such as fighting, theft, and truancy. The second program, Project CARE, successfully reduces delinquency through a school reorganization model.

Two programs were recommended in 22% of the counties. The Leadership and Resiliency Program and Reconnecting Youth Program both focus on dropout



prevention. Their frequent recommendation reflects the fact that dropping out is a widespread problem in many of Alabama's counties.

Another cluster of programs was recommended in 15% to 20% of Alabama's counties. All ten programs in this cluster were parenting skills programs. Five of these programs were recommended in 18% of the counties. The programs were: Any Baby Can, Meld for African-American Young Mothers, Meld for Growing Families, Meld for Young Dads, and Meld for Young Moms. These programs are intended primarily for teenage parents and were recommended for counties where adolescent pregnancies were among the three most problematic indicators.

Multidimensional Treatment for Foster Care, a program with a prevention module for foster care parents, was recommended for areas with relatively high numbers of children in foster care, amounting to 16% of the counties in the State. The Parenting Skills Program also has a module for foster care and adoptive parents and was recommended for the same counties.

Healthy Families America, Helping the Noncomplicant Child, and Parents as Teachers were recommended for counties with high rates of arrests for family offenses. These three parenting skills programs aim to reduce child neglect and abuse. They appear on the list of recommended programs in 15% of the counties.

The final ten programs were recommended in less than 15% of Alabama's counties. Athletes Training and Learning to Avoid Steroids was recommended for approximately 13% of Alabama's counties, where juvenile alcohol-related arrests were problematic. Retailer Directed Interventions was the next most popular program in this cluster. We recommended this program for counties where tobacco sales outlets was one of the three most problematic indicators – approximately 9% of the counties. Similarly, alcohol sales permits were among the three most problematic indicators in 7% of the State's counties. We recommended Communities Mobilizing for Change on Alcohol for these counties.

Six of the final ten programs were recommended in only 7% of the counties. The programs were: Al's Pals, CICC's Effective Black Parenting Program, Family Effectiveness Training, Incredible Years, Promoting Alternative THinking Strategies, Parenting Wisely, and the Seattle Social Development Project. These programs target problem behavior and were recommended for juvenile arrests for curfew, vandalism, and disorderly conduct.

## CONCLUSIONS AND RECOMMENDATIONS

### Reliability

We assessed the inter-temporal reliability of 32 of the 42 indicators collected. The remaining ten indicators did not have multiple years of data and hence, their inter-temporal reliability could not be determined. Of the 32 indicators tested, 22 met the minimum criteria for both Cronbach's standardized alpha and Heise's estimate of temporal reliability. The unreliable indicators are listed below.

- Homicide rates
- Juvenile arrest rates for violent crimes
- Juvenile birth rates
- Event drop out rates
- Rates of drop-outs prior to ninth grade
- Arrest rates among youth aged 10 to 14 for vandalism
- Arrest rates among youth aged 10 to 14 for alcohol-related offenses
- Juvenile suicide rates
- Alcohol-related traffic fatality rates
- Pregnant women in substance abuse treatment rates

We recommend the State not use the unreliable indicators for prevention planning, since the data do not appear to be stable over time. In the future, the State may collect additional years of data in order to update the results from this study. Each time the State obtains new data, tests for inter-temporal reliability should be performed. It is possible that some indicators that were not stable during the time period for this study (1998-2000) will be stable in the future and vice versa.

### Indices Based On Risk Factors

We tested whether the social indicators could be combined into valid indices of the risk factors in CSAP's model. Validity testing entailed constructing a Modified Multitrait-Multimethod Matrix. If validity were present, the matrix would show that indicators within the same risk factor correlate better with each other than indicators from different risk factors. This relationship was not observed in Alabama's data, leading us to conclude that indices of risk factors are not likely to be valid. In light of this finding, we recommend against creating indices of the CSAP risk factors, at least in Alabama.

### Indices Based On Domains

Risk and protective factors are typically classified into one of four domains: peer/individual, school, family, and community. We tested the feasibility of combining the social indicators into indices based on these domains. A Modified Multitrait-Multimethod Matrix was used to test the validity of the domains. If the domains were valid, indicators within each domain would correlate more highly with each other than with indicators in other domains. The matrix showed that this condition was not present in Alabama's data. We therefore conclude that indices based on domains are likely invalid and recommend against their creation and use in Alabama.

### **Indices Of Overall Risk And Protection**

We created indices of overall risk using factor analysis. This method analyzes correlations in the data and combines highly correlated indicators into indices. After creating the indices, we attempted to validate them against data on risk from the Alabama Student Survey of Risk and Protective Factors. Regression analyses demonstrated that the indices had no significant relationship with the survey data. Thus, we could find no evidence that the indices are valid measures of overall risk and protection. Consequently, we recommend that planners examine each indicator individually rather than consider index scores.

### **Utility Of Social Indicators**

Although social indicators in Alabama cannot be combined into useful indices, they are still informative when examined individually. Social indicators provide data on the location of high risk populations in the State. Many of these populations, such as dropouts and prisoners, were not sampled by the student survey. Hence, the social indicators study is the *only* source of information on these populations. In addition, social indicators provide information on phenomena related to substance use and misuse, such as drinking and driving arrests, drug-related arrests, and arrests for juvenile delinquency. In light of these facts, our recommendation is that planners examine social indicators on an individual basis, using the data in conjunction with their knowledge of the counties they serve.

### **Geographic Distribution Of Indicators**

Mapping and ranking individual social indicators revealed that each indicator had a unique geographic pattern. Overall, regional differences within the State were apparent on many indicators. Most often, these differences were seen between the north and south, with the south tending to experience higher rates on many of the indicators. Counties containing large cities or counties surrounding large cities often differed from those in rural areas, although neither urban nor rural areas appeared more problematic overall. Several indicators seemed to divide along the racial make-up of the counties. Areas with more minorities tended to have higher rates on these indicators, although there were exceptions. Finally, the dry counties tended to experience lower rates on many indicators.

### **Recommended Science-Based Prevention Programs**

We developed a set of program recommendations based on the three most problematic social indicators in each county. The problematic indicators and associated program recommendations appear in Table 5 of this report. As shown in the table, we recommended a variety of programs for each county, allowing planners to choose programs most suitable to the characteristics and needs of the local population. We recommend planners review Table 5 and select a subset of programs of interest. Planners can then research each program in their subset to determine the most appropriate programs for their area.

Each county in the State had a distinctive profile of problematic indicators and recommended programs. Nevertheless, some Statewide trends were apparent. The

Nurturing Program and the Quantum Opportunities Program were recommended in 81% of Alabama's counties, since they were recommended for a variety of social indicators. State planners may wish to consider implementing these programs on a Statewide basis.

Project PATHE and Project STATUS were the second most frequently recommended programs. They appear on the list of recommended programs in 57% of the State's counties. Their frequent recommendation may point to the need for programs that focus on school climate rather than on individual risk and protective factors. We recommend local planners give these programs, particularly Project PATHE, serious consideration. Planners could establish provider workgroups to work with the original program developers on implementing these programs in their area.

Challenging College Alcohol Abuse was third in popularity. It was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking was recommended in 40% of the counties and is also appropriate for the general population. These programs highlight the need to reduce high risk drinking behavior in many of Alabama's counties, particularly through environmental and community-based strategies. Planners in counties with high rates of alcohol-related arrests should implement these or similar science-based programs if they have not done so already.

Programs focusing on individual risk and protective factors also have an important role in many counties. For example, seven programs that aim to decrease juvenile delinquency and problem behaviors were recommended in 30% to 39% of Alabama's counties. The programs were: Functional Family Therapy, Positive Action, Parents Who Care, Project SUCCESS, Early Risers, the Adolescent Transitions Program, and Brief Strategic Family Therapy. Planners seeking to reduce juvenile delinquency should carefully review each program to determine the best package for the local target population.

Three other programs focusing on individual risk and protective factors were recommended in approximately 35% of the counties. Brief Alcohol Screening and Intervention for College Students was recommended for 36% of the counties, although it may be appropriate only in areas with colleges or universities. Protecting You/Protecting Me helps youth avoid riding with a drinking driver and was recommended in 33% of the counties. These two programs illustrate the need to address drinking issues using individual-level strategies in approximately one-third of Alabama's counties.

The third program in this group was Raising a Thinking Child, which was recommended for 36% of the counties. This program was originally designed for low income, African-American mothers. Since poverty is a problem in many areas in Alabama, programs designed for low income families are particularly important.

A variety of programs were recommended for less than 30% of Alabama's counties. While these programs may not be important for the State overall, they can play a critical

role in meeting prevention need at the local level. We recommend that local planners review the specific program recommendations for their county in Table 5, thereby ensuring that these important programs are not overlooked.

### **Summary**

This report presents social indicator data gathered from a variety of sources. We collected data on 42 indicators and examined their inter-temporal reliability. The indicators demonstrated good reliability. Of the 32 indicators tested, 22 were reliable. Although subsequent tests showed that the indicators could not be combined into validated indices, analyses of individual indicators generated several useful products. Tables with county rankings on each reliable indicator show planners where each county ranks in relation to other counties in the State on each indicator, while maps provide a visual impression of the data. The maps will allow planners to easily compare their county with surrounding counties and to examine geographic patterns in the data. In addition, this report presents a table with the science-based programs recommended for each county. Local planners can review the programs selected for their county and select the most appropriate program for their area. These products, along with the additional information presented on this study, make this Technical Final Report a rich resource for State and local planners alike.

# INTRODUCTION

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In 1999, the Alabama Department of Mental Health and Mental Retardation, Substance Abuse Services Division (SASD) received a federal contract from the Center for Substance Abuse Prevention (CSAP) to conduct a prevention needs assessment. With this contract, Alabama became 1 of 19 States participating in CSAP's State Needs Assessment Program. The program gave States the opportunity to thoroughly assess their need for prevention services, using a methodological framework developed by CSAP and early participants in the program. The methodology centered on three studies: a survey of youth in school, a social indicator study, and a community resource assessment. This technical final report pertains to the second study, the social indicators study. Social indicators are archival, county-level data that are collected by various agencies.

## BACKGROUND

The central purpose of the social indicator study is to assess substance abuse prevention needs across Alabama using reliable and valid county-level social indicator data. This study will:

- Investigate whether valid and reliable indices of risk and protection can be created from the social indicator data
- Examine the distribution of risk and protective factors across counties and regions
- Assess which science-based prevention programs suit each county's needs?

The mission of the Alabama Department of Mental Health and Mental Retardation, Substance Abuse Service Division (SASD) is to reduce the high-risk behavior associated with alcohol, tobacco and other drug use (ATOD). This mission is implemented through the development, financial support and evaluation of services that reduce risk factors and strengthen protective factors. The SASD works in partnership with local community providers to ensure that communities receive science-based, rigorously evaluated prevention programs that target local prevention needs. Resources are allocated through an annual request for proposals addressed to local prevention providers.

A major barrier to implementation is that prior to the current study, the SASD has had little data on risk and protective factors at either the State or local level. Consequently, it has been difficult to determine local prevention needs and fund providers accordingly. Historically, the SASD has relied heavily on national surveys and expert opinion to determine prevention needs. Other factors that have influenced resource allocation include historical program funding and a limited use of crime statistics. Some data on substance use outcomes have been available from Alabama's treatment needs assessment program, but this information is clearly not an adequate substitute for

prevention-focused data. It does not reveal the prevalence of risk and protective factors that local prevention programs must target.

The State of Alabama recognized the limitations of its current system for adequately planning and implementing prevention services. The Alabama Prevention Needs Assessment project was intended to address these limitations and was designed to provide the State with a non-overlapping, comprehensive family of studies that determines the need for and utilization of prevention services at the State and sub-State levels. It is anticipated that planners will use the data to set funding priorities, consider improvements to the population-based resource allocation formula, evaluate how the current system meets the needs of its population, and make data-driven decisions about how to improve the system.

## **SOCIAL INDICATORS: AN INTEGRAL PART OF THE NEEDS ASSESSMENT FAMILY OF STUDIES**

Alabama's needs assessment project consists of a family of three studies. The first study is the school survey, which collected data on risk and protective factors among Alabama's youth. The study produced valid and reliable individual-level data that were aggregated at the county level for the purposes of analyses and reporting (e.g. county chart book). These county level data can be aggregated to higher levels (e.g., catchment area or health planning region) for further analyses. The second study, the social indicator study, also collected data on risk and protective factors. In contrast to the school survey, the social indicator data applied to both adults and adolescents in the State and collected data at the county-level. Together, these two studies provide a comprehensive picture of the types of prevention services needed throughout the State. This information is of limited use if it is not compared to the current service delivery system. The third study, the community resource assessment, provided detailed information on current services by surveying all prevention programs receiving funding through the SASD. The study measured the services provided in each community, the populations served, and the risk and protective factors addressed by each program. Comparing services provided to services needed may reveal gaps and duplications in the system. This information will help planners better formulate strategies and objectives for the prevention system and to better allocate resources.

The social indicator study, in conjunction with the school survey data, was developed to measure the prevalence of risk and protective factors at the State, regional, and county-level. Analysis of these prevalence rates will provide information on which areas of the State are most in need of prevention services. The prevalence rates will also reveal which risk factors should be targeted for reduction and which prevention factors should be targeted for enhancement. By combining this information with data on the demographic and socio-economic characteristics of each county, the study will help the State of Alabama determine which types of prevention programs are most appropriate for each county. Program planners will then be able to combine these insights with their own knowledge about the unique characteristics of their county and make data-driven program planning and funding decisions.

Data from the three needs assessment studies can be aggregated or disaggregated as desired to allow for combinatorial and comparative analyses. Although the data were collected and analyzed at different levels (e.g., individual vs. county) for each of these studies, they can be combined or broken down so that the three data sets are on a par. For instance, individual-level data from the school survey study can be compiled to form a set of county-level data, while data from the community resource assessment can be separated into counties. Since social indicator data were collected at the county-level, converting the school survey and community resource assessment data sets into county-level data can facilitate analyses that will yield a clearer and more detailed picture of Alabama's prevention needs and resources. Data can be integrated and depicted via mapping to show, for instance, the availability of prevention services in a particular geographical area where there is a high rate of alcohol sales and in which adolescents perceive that substances are readily accessible.

Social indicators studies are an established methodology in the needs assessment field. Social indicator data bring objectivity to the planning process (Cagle & Banks, 1986) and provide valuable insight on the location and intensity of substance abuse problems in the State. Two particularly salient and advantageous features of social indicator data are that they are generally available at the county level, if not the community/local level, and, for the most part, are reported uniformly across geographic areas. Although disruptions to this uniformity do occur (e.g., reporting practices of local police jurisdictions may differ), the convenience and diversity of information afforded by the use of social indicator data make their inclusion invaluable, especially when they are used in comparison or in conjunction with other data. For instance, social indicator data complement survey data. In contrast to surveys, social indicators do not rely on self-report and are thus not susceptible to the particular biases associated with this method of collecting data that are more subjective in nature. Social indicators may thus be used to validate the self-report survey data. Additionally, since they are initially acquired for another purpose, social indicator data are far less expensive to collect than are survey data and consequently can be collected more frequently.

Regardless of the level at which prevention planning and funding occur—county vs. catchment area vs. community—the collection and analysis of social indicator data at the county level is justified for several reasons. First, most data that are collected and incorporated as social indicators are compiled routinely at the county level, but are collected infrequently (if at all) at more local levels (Maine Department of Mental Health, Mental Retardation, and Substance Abuse Services, 1997). Thus while compiling community-level indicator data would be desirable in addition to the collection of county-level data, it is not feasible. Second, communities can use county-level information to allow for comparisons between similarly-situated (e.g., economically; population-wise) regions. Additionally, and relevant to the habitual collection of county-level indicator data, is the notion that the use of county-level data allows for the effective study of prevention efforts. Since county-level data are accrued annually, a year-by-year comparison of risk factors can be conducted, highlighting successful or ineffective prevention programming. As with any study employing aggregated data, there are some caveats. Most substantially, the notion of “ecological fallacy” must be considered. That



is, county-level findings, just as city-level or catchment area-level findings, should not be applied to individual-level functioning. For example, if data indicate that County A has a high score on a “family management problems” index, it does not follow that each adolescent in County A, or even a particular adolescent in that county, possesses that risk factor. The issue of ecological fallacy will be addressed more fully in the *Systematic Biases and Limitations* section of this report.

The social indicator study employs archival data and provides information, which in conjunction with data procured from the school survey and community resource assessment studies will allow Alabama officials and prevention program planners to understand the current levels of substance use prevalence, risk and protective indices, and prevention services that are needed or available. In addition to highlighting the current scope of Alabama’s substance use issues, the data collected as part of the social indicators study will serve as an evaluative tool that can be used to help gauge the successfulness of future prevention efforts. A further discussion of the merits of social indicators and, more generally, risk and protective factor theories of substance use, is contained in the literature review that follows.

# LITERATURE REVIEW

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## RISK AND PROTECTIVE FACTOR MODELS

Reducing the prevalence of risk for substance abuse is complicated, more so perhaps than for any other public health concern. Whereas educational campaigns may have been sufficient to convince the public to wear seatbelts, change their diet, or enforce environmental safety laws, substance abuse prevention requires addressing a complex set of interrelated psychological, family and social problems, in addition to changing general attitudes. A theoretical framework for selecting interventions that reduce risk or enhance key protective factors is specified by the social development model (Hawkins, et al., 1992; Hawkins & Weis, 1985). The model builds on social control theory (Hirschi, 1969) and on social learning theory (Bandura, 1977) and proposes that bonding and clear norms are the protective factors that inhibit the development of anti-social behavior. The social development model hypothesizes that processes involving these constructs produce pro-social bonding, opportunities for active involvement, skills for successful participation in social groups, and a consistent system of rewards and mild sanctions to foster pro-social bonding. Programs can provide such environments themselves or attempt the more difficult but perhaps ultimately more effective goal of altering a young person's social environment.

In one of the most comprehensive reviews on the topic at the individual-level (i.e., using the individual as the unit of analysis, as opposed to aggregated levels), Hawkins et al. (1992) identified a list of risk and protective factors related to substance abuse. These included factors related to individual psychology, as well as family, peer, school, and community domains. Factors in the community domain are laws and norms favorable to substance use, the availability of substances, extreme economic deprivation, neighborhood disorganization, and transitions and mobility. A family history of substance abuse, parental use or favorable attitudes toward use, and family conflict were factors identified as increasing the risk of abusing substances within the family domain. Problems within the school domain include academic failure, a low degree of school commitment, and early and persistent problem behavior. The peer domain comprises social rejection in elementary grades and association with drug users. Lastly, Hawkins and colleagues identified alienation, rebelliousness, favorable attitudes to drug use, and early onset of use as factors in the individual domain that were likely to lead to substance abuse.

Consistent with Hawkins et al.'s (1992) model, other studies conducted at the individual-level have identified a number of risk factors within the family, peer, individual, school, and community domains. For example, within the family domain, lack of consistent limits, child abuse and neglect, and parental rejection all play a role in the development of substance abuse but may require different types of prevention (Brook, Gordon, Whiteman, & Cohen, 1990; Brook, Cohen, Whiteman, & Gordon, 1992; Friedman & Glassman, 2000; Gorsuch & Butler, 1976; Kandel, Yamaguchi, & Chen, 1992). Within the broad category of individual alienation and attitudes are specific psychological problems such as depression, suicidal tendencies, anti-social disorders and low self-

esteem as well as more general personality and attitude differences such as rebelliousness and low risk aversion. The effect of any particular risk factor will depend on a combination of other factors as well as gender, race and other group differences (Baumrind, 1983; Brook, Whiteman, Cohen, & Tanaka, 1991; Boyd, 1993; Cloninger, 1988; Dembo et al., 1988; Jessor, Donovan, & Windmer, 1980; Jessor & Jessor, 1977; Kelleher, Chaffin, Hollenberg, & Fischer, 1994; Loeber, 1990; Luxemberg, Higgins, Christenson, & Rainey, 1994). The strongest overall predictor of adolescent substance abuse is peer use, since it is the most proximate correlate. However, choice of peer groups is affected by other risk factors, many of which are likely prior and necessary causes related to family and environment (Friedman & Glassman, 2000; Hansen et al., 1987; Hansen & Graham, 1991; Hundleby & Mercer, 1987; Wills & Cleary, 1996). Since the publication of the Hawkins review in 1992, research has continued to support these basic risk and protective dimensions (see Durlak, 1998, for review; Costa, Jessor, & Turbin, 1999; Flewelling, Rachal, & Marsden, 1992; Ogden & Nicoll, 1997; Pollard, Hawkins & Arthur, 1999; Wills & Cleary, 1996).

Detailed community risk studies are also common. Many of these studies are conducted at the community-level and explore how community structures ameliorate or exacerbate a host of broad social problems and how changes in one aspect of the social system affect the total system. For example, programs to address substance use can create positive changes in other aspects of community life by expanding the scope of organizational life and teaching skills that individuals apply more broadly. Similarly, many programs not specifically addressing substance use can reduce the prevalence of alcohol- and drug-related problems by reducing related risk factors and increasing protective factors. Several studies have examined the buffering effect of different protective factors (Duncan & Raudenbush, 2001; Peterson, Krivo, & Harris, 2000; Smith, 1998). For example, the effect of economic deprivation and community disorganization may be mediated by a number of other community characteristics such as strong social organization and informal support networks (Peterson, Krivo, & Harris, 2000; Smith, 1998).

Current research is focused on examining the interrelationships of factors and their mediating and moderating effects (Dukes & Stein, 2001; Fahs et al., 1999; Friedman & Glassman, 2000; Wills & Cleary, 1996). If a factor has a mediating effect on a substance use outcome, it means that the relationship between an independent variable and the outcome occurs through the factor (Baron & Kenny, 1986). For instance, if factor B (poor family management) were a mediator between factor A (parental substance abuse) and outcome C (cigarette smoking), the relationship between A and C would be smaller after controlling for B than before controlling for B. A moderating effect indicates an interaction, namely between risk and protection. For example, levels of opportunities for social involvement within the family (protective factor) may interact with levels of family conflict (risk factor) to produce differences in substance use. In this case, the protective factor serves as a “buffer” against the harmful effects of a risk factor. These studies demonstrate that relationships between factors are much more complex than previously assumed (Call & Mortimer, 2001). Research examining differences in the effects of risk and protective factors across time and place reveal that

some factors may be more or less important under different contexts across time (Brown, Schulenberg, Bachman, O'Malley, & Johnston, 2001; Hancock, 1997; Taylor, Graham, Cumsille, & Hansen, 2000) and across race, ethnicity and gender (Sullivan & Farrell, 1999; Fisher, Storck, & Bacon, 1999; Griffin, Scheier, Botvin, & Diaz, 2000; Jones-Webb, 1998; Dawson, 1998). These findings may suggest the importance of weighting social indicators when using them to create summary measures.

Rather than focusing on any particular risk factors as being more important than others in the substance use problem development chain, several lines of research have suggested that it is the overall level of risk incurred by adolescents that is associated with delinquent behaviors (e.g., Pollard et al., 1999; Newcomb & Felix-Ortiz, 1992; Newcomb et al., 1986). That is, the more risk factors that adolescents face, the more likely it is that they will engage in substance use/abuse. This study will apply this finding in the literature to the evaluation of social indicators. We will test whether a composite index of indicators, comprising factors in various domains, is associated with higher prevalence rates of substance use, rather than any one particular indicator.

## **SOCIAL INDICATORS AS A NEEDS ASSESSMENT TOOL**

Prevention needs assessments are generally structured in light of the seminal work and theoretical articulation of Hawkins et al. (1992). Youth surveys are one method of measuring the prevalence of risk and addressing the need for prevention services. However, because surveys are expensive, they tend to be carried out either infrequently or without a large enough sample to allow continuous monitoring of prevention needs across small geographic areas. Social indicator studies have therefore become an important component of prevention needs assessments. These studies are based on data collected on a regular and frequent basis and provide information at a number of geographic levels, from planning regions to much smaller units such as ZIP code areas (Breer et al., 1996; Luxemburg et al., 1994; Maxwell, Wallisch, Farabee, Spence, & Liu, 1999; Simeone, Frank, & Aryan, 1991, 1993; Tweed & Ciarlo, 1992).

Although the use of social indicators to measure prevention needs is a relatively new development, social indicators have a long and successful history of application in the related fields of treatment needs and mental health needs assessments (Anglin, Caulkins, & Hser, 1993; Tweed & Ciarlo, 1992; Simeone et al., 1993; Gruenewald, 1997; Wilson, 2000; Schmidt & Weisner, 2000; Cagle & Banks, 1986; Goodwin, 1994; Holzer, Goldsmith, Jackson, & Swanson, 1988). Social indicators serve as proxy measurements of risk factors and may do so directly or indirectly (McRae, Beebe, & Harrison, 2001; Hser, Prendergast, Anglin, Chen, & Hsieh, 1998; State Needs Assessment Profile Virginia Social Indicators Study). Direct measures are generally tantamount to outcomes or consequences of substance use and include such variables as DWI rates and drug arrest rates. By and large, indirect measures are sociodemographic (e.g., gender and age distributions) and socioeconomic (e.g., poverty rate; unemployment rate) factors that may not necessarily have a direct causative relationship with substance use, but are nonetheless associated with this outcome.

A number of States have recently conducted substance use prevention needs assessments using social indicators including Florida, Massachusetts, New York, New Jersey and the States in the Six-State Consortium (i.e., Kansas, Maine, Oregon, South Carolina, Washington, and Utah). The Consortium was formed with the specific purpose of examining and validating a standardized list of prevention indicators that could be used consistently across States. Each measure was developed to represent a domain identified by Hawkins et al. (1992). The measures have either a strong theoretical relationship to an identified risk or protective factor or a strong correlation with substance use. States have also used indicator studies to guide resource distribution and target specific types of programs to areas with particular types of problem loads (Amodeo & Gal, 1997; Kim, Wurster, Williams, & Hepler, 1998; Maxwell et al., 1999; Ryan, Abdelrahman, French, & Rodriguez, 1999).

Recent work conducted by states in the process of performing needs assessments (e.g., Flewelling et al., 1994; Kansas Health Foundation, 1998; Kreiner et al., 2001; Maine State Department of Health and Mental Retardation, 1997), the Six-State consortium, and other researchers has revealed many important findings in the prevention field associating valid and reliable aggregate-level (e.g., town, county) risk and protection indicators with substance use prevention need. Specific measures that have been identified include rates of adult treatment to represent the likely distribution of parents using substances, juvenile drug prevalence and outcome measures, signified by DUI and drug arrests, and the density of liquor outlets to represent community norms and availability. Common socio-economic measures, such as welfare recipients, unemployment, renter occupancy, net migration, general crime rates, and density, have been successfully used to gauge community domain factors. The number of children in foster care, child protection cases, and divorce rates are some of the most consistently used indicators of family conflict and management problems. Measures of school factors include achievement scores and dropout rates. Some studies have also included school-level suspension data. Arrest data for vandalism, drug possession, and other crimes for youths aged 10-14 are the main indicators of early problem behavior. Although many individual-domain factors are difficult to model with archival data, suicide rates, rates of teen births, non-substance juvenile crime rates, and youth rates of mental health treatment have been found to be useful measures of features that are categorized as being individual type factors (Gruenewald et al., 1997; Johnson, Farquhar, & Sussman, 1996; Kim et al., 1998; Kreiner et al., 2001; Maxwell et al., 1999; Donovan, Backus, & Wieczorek, 1997).

Tests of the predictive validity of county-level indicators suggest that social indicators maintain significant associations with indices of future substance use. Through the course of conducting its needs assessment, New York's Office of Alcoholism and Substance Abuse Services (OASAS) developed three indices grouping together social indicators that share common factors (Dixon & Amsler, 1999; Donovan, Backus, & Wieczorek, 1997): Community Risk, Youth Risk, and Youth Consequences. The Community Risk Index included indicators of social disorganization (e.g., measures of poverty, such as the unemployment rate; measures of violence, such as the homicide rate) that affect the community at-large. The Youth Risk Index was calculated from

indicators tapping school/family and behavioral problems thought to be associated with alcohol/substance use (e.g., measures of family dysfunction, such as the number of foster care admissions; measures of academic failure, such as percent academic performance below the state reference point). As opposed to the other two indices, the Youth Consequences Index comprised indicators of problematic *outcomes* (e.g., DWI, drug arrests) and serves as a baseline measure of the predicted variable. Regression analyses revealed that a model employing these three indices (averaged over 1989 to 1991) accounted for 84% of the variance in levels of youth alcohol consequences (1993-1994) and 72% of the variance in levels of youth drug consequences (Dixon & Amsler, 1999). Additionally, the Community and Youth Risk Indices accounted for unique variance in both the models for youth alcohol consequences and youth other drug consequences. This proportion of explained variance, which is in addition to the variability accounted for by the baseline index of Youth Consequences, bolsters evidence suggesting that these social indicators possess predictive validity.

Important developments in prevention indicator methodology are not limited to the examination of risk factors. Some States, such as Massachusetts and Florida, have investigated the use of protective factors. Massachusetts, taking direction from the extensive work being conducted on social capital and civic engagement, included measures of organizational density in their separate protective factor model (Kreiner et al., 2001). In general, however, it has been difficult to integrate either buffering effects or clearly defined protective factors into social indicator research. Indicators of protective factors are not always available. Moreover, modeling buffering effects sometimes requires path modeling, which is more commonly used on individual-level data, rather than the aggregate-level (e.g., county-level) data typically analyzed in social indicator studies. Additional research should determine both the indicators and methods for incorporating protective factors into what are now predominantly risk models (Coleman, 1988, 1990; Kreiner et al., 1997; Putnam, 1993, 1995, 2000).

Another recent finding is that broader indices of risk and protective factors may be more appropriate than narrowly defined indices. For example, the State of Florida found that individual indicators tended to capture effects across a number of domains and that broader indices had better statistical properties (Kim et al., 1998). Similarly, the State of New York conceptualized its indicators into the broader macro-level risk and protective indices and created a youth risk and consequence index (Donovan et al., 1997).

## METHODOLOGY

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The current study followed the model of the Six-State Consortium in the selection of indicators and modeling methods. These indicators were evaluated for use in Alabama in light of the particular characteristics of this State. In the present study, we examined the effect of different ways to conceptualize indices of risk and protection and investigated patterns of differences in magnitude of individual indicators across counties. We hope that this study will not only provide the State of Alabama with accurate estimates of the level and type of risk and protective factors, but also will add to the growing body of knowledge on using indicators in prevention needs assessment.

### INDICATOR SELECTION

CSAP provides a list of validated archival indicators to all States participating in the State Prevention Needs Assessment program. We collected data for all indicators on the list. In addition, we collected data on the rates of church and youth organizations. These measures were inspired by Kreiner et al. (2001) and were intended to measure community opportunities for pro-social involvement, an important protective factor.<sup>1</sup>

### DESCRIPTION OF INDICATORS

Table A-1 in Appendix A displays the indicators collected and their definitions. The middle column in the table contains the definition of each indicator. The indicators follow CSAP's specifications, with several exceptions. The first exception is voting. CSAP measures voting as the percentage of persons registered to vote who actually vote in a State or Federal election. Unfortunately, voter registration data in Alabama are difficult to obtain and are of poor quality. We calculated the voting variable by dividing the number of persons voting by the total number of persons over 18 in the State. This variable was the closest available measure to CSAP's indicator.

Another exception is arrests for domestic violence. The CSAP specifications define this indicator as "the rate of domestic violence arrests of partners (including spouses, former spouses, and lovers) per 1,000 adults." Arrests for child abuse are excluded. The closest available indicator in Alabama is offenses against the family and children, defined as "Nonsupport, neglect, desertion, or abuse of family and children." This indicator was substituted for domestic violence arrests.

A third noteworthy exception is prisoners. CSAP's indicator includes persons sentenced to both State and local prisons. In Alabama, data were available for State prisons only. Thus, Alabama's prison indicator excludes prisoners sentenced to city and county jails.

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<sup>1</sup> Kreiner et al. (2001) focused on social capital and measured the diversity of various community organizations. We focus on opportunities for pro-social involvement and measure the rates of churches and youth organizations per 100,000 people.

Three other indicators slightly differ from CSAP's definitions. The first indicator is alcohol sales outlets. CSAP defines alcohol sales outlets as retail alcohol sales outlets on record. In Alabama, retail sales outlets include businesses with club liquor licenses and licenses to operate brew pubs. Some States may have excluded these establishments based on CSAP's definition. The second indicator is new home construction. The CSAP definition of new home construction is the reported number of new building permits issued for single and multi-family dwellings. Public housing could be included under this definition, but Alabama's indicator measures only the number of permits authorized for new private housing units. Homicides are the third indicator that differs slightly from CSAP's specifications. The CSAP definition suggests that the data come from the Uniform Crime Reports. In Alabama, the data on homicide victims in Alabama came from death certificates. There may be slight discrepancies between the number of homicides reported in the Uniform Crime Reports and the number reported on death certificates.

The indicators on CSAP's list are expressed as rates. Alabama uses the variables specified by CSAP to create rates. All rates in the Alabama social indicator data set are expressed per 100,000 units. In contrast, the rates specified by CSAP are in various orders of magnitude such as rates per 1,000 units and percents. Expressing all rates per 100,000 units does not affect the statistical properties of the indicators but aids in comparing the prevalence of one indicator to another. This change made by Alabama is therefore purely cosmetic.

## **CLASSIFICATION OF INDICATORS**

According to the CSAP model, each indicator relates to one of the risk or protective factors identified by Hawkins, Catalano, and Miller (1992). The indicators in Table A-1 are grouped according to the associated risk or protective factor identified by CSAP. The name of the risk or protective factor appears in the gray row above each group of indicators. The CSAP student survey categorizes risk and protective factors into four domains: peer/individual, community, family, and school. We classified each indicator into one of these domains, using a scheme similar to that developed by Virginia (CSR, Incorporated, 2002). The domains are shown in the third column of Table A-1. It is interesting to note that indicators within the same group often correspond to different domains. This shows that the risk and protective factor model may function differently in the social indicator and student survey data.



## DATA COLLECTION

### Sources and Procedures

All data from this study come from secondary sources. Dr. Donald Bogie, Director of the Center for Demographic Research at Auburn University Montgomery, collected the majority of the data through formal requests to the State agencies that own the data sets.<sup>2</sup> Data collection began during the first year of the project and lasted several months, since many indicators were not immediately available. A second wave of data collection was completed during the second year in order to obtain indicators from more recent years. As soon as an indicator was available, we reviewed the data and contacted the publishing agencies regarding any suspicious or missing values. An administrative assistant then entered the data under the supervision of the investigator.

Table A-2 in Appendix A exhibits descriptive information on the sources of data and related indicators. The first column in the table lists the source of the indicator, while the second column lists the indicators that were obtained from this source. Ten State agencies provided data for this study. Additionally, we obtained data from the Internal Revenue Service and the United States Census. The largest contributor of data was the Alabama Criminal Justice Information System, which furnished the arrest data for this study. Arrest statistics account for nearly 30% of all the indicators in this study. The next largest contributor was the United States Census, which furnished seven indicators for this study. The remaining agencies each contributed one to three indicators.

The third column in the table displays the data collection frequency. Most indicators are available on a yearly basis. We collected yearly indicators from 1996 through 2000. Census data are available decennially. This study collected data from the 1990 and 2000 censuses, but relied primarily upon the 2000 census data, since they are more recent. Voting data are available only when there is a State or Federal election. This study examined data from Federal elections in 1996 and 2000, and from the 1998 State election.

The fourth column in the table describes the time frame for each indicator. Most indicators are available by calendar year. Some indicators, however, are organized by the State fiscal year. The indicators organized by State fiscal year are temporary assistance for needy families (TANF) participants, food stamp recipients, adults in treatment, pregnant women in treatment, children living in foster care, event dropouts, and dropouts prior to 9<sup>th</sup> grade. The State fiscal year offsets the calendar year by one quarter. It begins on October 1 and finishes on September 30<sup>th</sup> of the subsequent calendar year. Alabama dated these indicators according to the latter calendar year spanned by the indicator. Net migration follows neither the State nor the calendar year. This indicator spans July of one calendar year to June of the subsequent calendar year. The State followed the rule created for indicators organized by the State fiscal year. Using this rule, net migration would be classified according to the latter calendar year.

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<sup>2</sup> The exception was data from the Internal Revenue Service (IRS), which were downloaded directly from the IRS Web site by DATACORP staff.

The fifth and final column of the table describes the medium on which data are published. The indicators from the census and voting data are available electronically. The remaining variables are available on paper and were entered by the project's administrative staff.

### **Database Structure**

We stored and analyzed the data for this project in SPSS format. SPSS is a statistical software program that stores data in a spreadsheet. Each row of the spreadsheet contains the data for one county, while each column contains the data for one variable. Variable labels stored in the spreadsheet allow the researcher to view a description of each variable. A guide to using the data set is available on paper and electronically.

### **Quality Control**

#### *Overview*

Quality control procedures were integrated into all phases of this project. As data became available, we reviewed the information and contacted the source agencies regarding any missing or unusual values. We documented these values and, when possible, corrected them. Data entry was checked for accuracy and ensured that errors were corrected. In addition, statistical procedures were used to detect and correct for anomalies in the data that were not due to data entry errors. Specifically, we checked for missing data, non-normal distributions, and outlying observations. The procedures and results are described in the paragraphs below.

#### *Missing values*

An SPSS syntax program systematically searched the database for missing values. The program found that only two counties were missing data. Clay County had no information on dropouts prior to 9<sup>th</sup> grade, while Lamar County was missing several arrest statistics for 1996. The missing arrest data posed little difficulty, since we had already decided not to include data from this year in the analysis. The dropout variable, however, was more problematic. Not only was information for Clay County missing, the data for Limestone, Franklin, and Jefferson Counties were incomplete. Each county was missing data from school systems within the county. We excluded the counties with missing data and then tested the inter-temporal reliability of the variable. The variable proved to be unreliable, and the indicator was dropped.

We also asked agencies to report incomplete data. We discovered that one indicator had partial data for one county. Specifically, data on free lunches for Jefferson County excluded the Mountain Brook City School System in 2000. Since Mountain Brook accounts for only a small fraction of Jefferson County's student population, we included Jefferson County in the analyses. However, the student population of Mountain Brook was excluded from the denominator when calculating the rate of free lunches.

One of the investigators, Dr. Donald Bogie, is a leading demographer in the State of Alabama. Dr. Bogie has extensive knowledge on demographic and sociological data and has worked with social indicator data for many years. During his review of the data, he found evidence of under-reporting on two indicators. The first indicator is new home construction. Dr. Bogie noted that the number of building permits issued in several counties was suspiciously low, suggesting that home construction without permits was occurring. The number of divorces in Greene and Wilcox counties was also low, indicating possible under-reporting.

### *Outlying observations*

Observations that lie far from the majority of cases can be problematic in statistical studies. Tabachnick and Fidel (1989) note that outlying observations can not only affect both Type I and Type II errors, but also cause problems of interpretation when results are “overly determined” by the outliers. We examined both the histograms and standardized scores of each indicator in order to detect possible outlying observations, however, no major outliers were found. In addition to univariate outliers, the data were screened for multivariate outliers following the methods recommended by Tabachnick and Fidel (1989).

### *Normal distributions*

Variables that follow a normal distribution have good statistical properties and facilitate the interpretation of analytical results based on parametric statistics. We constructed histograms using SPSS software to search for deviations from normality and found that many variables did not follow the normal distribution. Several transformations were examined for each of these variables and the transformation that yielded the most normal distribution was used.

### **Final Unit of Aggregation**

Social trends vary considerably across geographic areas. To study this variation, we require data on small geographic units such as the county or town. The smaller the geographic unit of analysis, the more precisely we can measure how social trends vary within the State. This study used the smallest available geographic unit in Alabama, which is the county. This unit of analysis provides a good starting point for social indicator analysis in Alabama. Counties are meaningful political entities in the State, and a fair amount of policymaking and planning takes place at the county level.

### **Coverage**

The indicators on CSAP’s list of prevention indicators were available for all 67 counties in the State, with only the few exceptions described in the *Quality Control* section of this document. Coverage over time was also satisfactory. Section A-3 in Appendix A displays the years of data available for each indicator. Most of the indicators were available for several consecutive years between 1996 and 2000. Some of these indicators were available for this entire time span, while others extended to the year 2001. Data on alcohol and tobacco sales were not available for this time period. We

could only obtain sales data for 2000 and 2001. The decennial census data were not available for any consecutive years. Rather, there were census variables for the years 1990 and 2000.

A subset of years was selected that balanced the need for consistent time periods with the benefits of using several years of data. We analyzed data from the three most recent years available, ending with the year 2000. The year 2001 was excluded because so few variables had data available. Alcohol sales outlets, tobacco sales outlets, and voting did not have consecutive years of data. Data was used from 2000 for these indicators. Data on church and youth organizations were only available for 2000. Census data were accessible for 1990 and 2000, but the 1990 data were out of date and so were not used.

### **Data Availability, Format, and Accuracy across Substate Areas and Across Time** *Availability and format*

The indicators in this study were consistently available across counties and over time, with the exceptions described earlier in this section. The format of the variables is consistent across counties. All State agencies contributing data to this study use standardized reporting definitions, and most use computerized reporting systems to increase data uniformity and adherence to standards. Variable formatting is also consistent over time. We did not discover any changes in reporting definitions during the years for which they obtained data.

#### *Variations in accuracy across substate areas*

Although the overall definition and format of the variables is uniform, variations in accuracy across geographic areas may exist. One reason for quality differences could be the accuracy and timeliness of the local agencies that report to the State. Some local agencies may lack the staff time and budget to submit high quality data on a regular schedule.

Another cause of variation in accuracy is that the phenomena that indicators are not always observed by the reporting agency. An important example is arrest rates, which are intended to measure crime. A crime can occur without the subsequent recording of an arrest for several reasons. First, the police may be unaware of the crime. For example, drunken driving each year in which the driver is not caught (e.g. Beitel, 1975; Evans, Neville, and Graham, 1991; Levitt and Porter, 2001). A second reason is that the police may be aware of the crime but may not know who the perpetrator is or have insufficient evidence to make an arrest. Finally, a police officer may have sufficient evidence to make an arrest but may choose not to arrest the suspect. This phenomenon has been frequently documented with respect to violations of alcohol laws (e.g. Benson, 2000; Mastrofski, Ritti, & Hoffmaster; Meyers, Heeren, Hingson, & Kovenock, 1987; Wagenaar & Wolfson, 1995) and drug laws (McDonald, 1973; Warner & Coomer, 2003). There is also some evidence to suggest that police discretion in arresting occurs with

other types of crime as well (e.g. Arcuri, Gunn, & Lester, 1987; Chaney & Saltzstein, 1998, Kahan, 2000).

Another important example is alcohol-related fatal crashes. According to the National Highway Traffic Safety Administration, blood alcohol levels are not available for many crashes (Tessmer, 2002). These crashes are not reported as alcohol-related, because the reporting agency has no data on the role of alcohol in the crash.

#### *Variations in accuracy over time*

Data accuracy may also vary across time. State and local agencies work continually to modernize their data collection systems. A major quality improvement initiative could result in sudden changes to reported statistics. These changes could be falsely attributed to a change in the underlying social phenomenon rather than an improvement in the data. Although we are not aware of any major quality improvements among the agencies that provided us data, we took steps to mitigate this effect by testing for reliability and by examining whether indicators could be combined into composite scores.

#### *County of residence versus county of occurrence*

Some of the variables in the data set are classified by county of occurrence, while others are classified by county of residence. Arrest rates and rates of children in foster care are classified by county of occurrence, while the remaining variables are officially classified by residence. Interpreting variables classified by county of occurrence is a complex process, since the extent to which they reflect events among the actual residents of the county is unknown. For example, residents in dry counties may travel to non-dry counties to consume alcohol and may be arrested there. In this case, the arrest rates in the wet counties reflect not only alcohol-related crimes among county residents, but alcohol-related crimes among the non-residents who drink there.

Treatment data are a special case. Although the State requests data on the residence of each person admitted, treatment facilities often list only the county in which the treatment facility is located. This reporting issue can make treatment data especially difficult to interpret, since the variables mix residence and occurrence with no way to discern the two.

A related issue concerns juveniles living away from home and children in foster care. These variables are reported according to the residence of the children rather than that of the parents. Thus, the indicators measure where children from troubled families currently live, but may not measure where the troubled families were originally located. Researchers should consider this fact when interpreting these variables as indicators of family management problems.

## Limitations of the Data

### *Systematic biases*

Two sources of bias were identified on the social indicators study. The most serious form of bias affects the arrest and prison data sets. Some researchers purport that arrests are racially biased (e.g., Austin & Allen, 2000; Miller, 1997; Taylor & Whitney, 2002). This literature has shown that minorities are arrested more frequently, particularly on drug-related charges. Estimates of the extent of racial bias vary from study to study, and we found no published information on racial bias in the State of Alabama. However, it seems possible that this bias would be present in many of the arrest statistics collected for this study.

A less serious form of bias is social desirability bias. This bias would most likely affect statistics on dropouts, adolescent suicide, and unemployment. Knudsen (1995) speculates that adults may falsely report on the census that they have graduated from high school, resulting in an undercount of high school dropouts. Unemployment statistics also rely on self-report. In order to be classified as unemployed, people must report that they are seeking work. Some people may falsely report that they are actively looking for work, causing upward bias in estimates of the unemployment rate (U.S. Department of Labor, Bureau of Labor Statistics & U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau, 2002). The officials who complete death certificates may influence estimates of suicides. In some cases, these individuals may be reluctant to designate the death as a suicide because of issues related to insurance benefits, social stigma, and religious stigma (Mohler & Earls, 2001).

### *Ecological fallacy*

One notable caveat when considering social indicator data is that the inferences that can be made from the data about the *individuals* residing in a geographical area are limited. The notion of “ecological fallacy” asserts that results from analyses of data at one level generally should not be applied to data at other levels (e.g., Donovan, Backus, & Wieczorek, 1997; Freedman, 2001; Bromet, 1995). A classic example of this fallacy is given by Durkheim’s (1897) analysis of suicide rate data in 19<sup>th</sup> century Europe; Durkheim concluded that since countries with more Protestants evinced higher suicide rates, Protestants were more likely to commit suicide (Freedman, 2001). The flaw with this way of thinking lies in the nature of the data aggregation; a relationship that holds at an aggregated level (e.g., county-level, or even country-level in Durkheim’s case) may not necessarily be retained at another level (e.g., individual-level). As the social indicator data do not delineate individual persons, they should not be used to ascribe characteristics of a group to individuals. Thus, while social indicators provide invaluable data, they must be subjected to careful interpretation.

### *Relationship between risk and indicators*

Although most of the indicators in CSAP's model are constructed so that risk increases as the value of the indicator increases, several indicators do not follow this pattern. Risk simultaneously increases and decreases on different risk factors as these indicators increase. The first problematic indicator is new home construction. High levels of new home construction may reflect high levels of transition and mobility in the community, which is a risk factor. However, they may also reflect economic prosperity, which could indicate that the community is low on social and economic deprivation, another risk factor. Thus, as the indicator rises in value, risk falls on one factor and rises on another. Net migration follows a similar pattern, where economic deprivation falls and mobility rises with net migration.

Arrests for alcohol and drug abuse violations are also problematic in this regard. According to the CSAP model, the higher the arrest rate, the greater is the rate of families with substance use problems, an important risk factor. Many researchers have noted, however, that arrest rates indicate trends in law enforcement as well as substance use in the community (Levitt, 1998; Steffensmeier & Harer, 1999; O'Brien, 1996). Strict enforcement of laws may indicate a lack of norms favorable to substance use, another important risk factor. Thus, arrests may indicate a high level of risk on one indicator and a low level of risk on another. The effect of arrests on a third risk factor adds to the complexity of the problem. Active policing against violations of drug and alcohol laws may lower access to these substances in the community. Access to alcohol and drugs is another key risk factor in the CSAP model.

### *Variation within counties*

A final caveat concerning county-level social indicator data is that counties are not necessarily homogenous. Data are aggregated and averaged across the county, and misleading inferences can be drawn from the data regarding some areas of the county. For instance, a city and a rural town located within the same county may manifest disparities in risk factors that would not be reflected in the county-level data. While analysis of data describing smaller geographic areas (e.g., community-level) would be beneficial with regards to this issue, it was not possible to acquire social indicator data at a more local level.

## **PARTICIPANT CONFIDENTIALITY**

The methodology for this study ensured that confidentiality was well protected. The study utilized county-level data. No information on individual persons was collected or analyzed. In addition, the county-level indicators were not linked to each other. For example, the State received information on the number of persons arrested and the number of persons receiving TANF, but not the number of persons receiving TANF who had been arrested. The lack of linked information made it virtually impossible to identify individuals in the data set, and we made no attempt at this form of identification.

# ANALYTIC METHODS

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## QUALITY CONTROL

### **Data Integrity**

We took many steps to ensure data integrity. Social indicator data are available in Microsoft Excel and SPSS. Dr. Bogie forwarded the social indicator data set to us, where it was cleaned and amassed into a unified database. The social indicator data were received in Excel, where they were cleaned, and then imported into SPSS for additional cleaning and analysis.

We appointed a project manager as well as a data manager for the Social Indicator study. The data manager was responsible for all of the programming that was required for data compilation and analysis. The data manager was the only party with saving and editing rights to the working copy. All other analysts and staff had “read-only” access. In order to keep track of all data transfers and changes, the data manager was also responsible for keeping a data manual that documented all changes and transfers that were made in the data files. The project manager supervised the data manager to ensure proper handling of the data.

The data were housed in databases (Excel and SPSS) on our secure server, which was backed up each night on a disk that was housed in a locked safe.

### **Data Preparation**

There were several steps to prepare the data for analysis from the time they were forwarded to us to the time they were analyzed. Data arrived from the Center for Demographic and Cultural Research in Microsoft Excel form. Because of the analytical limitations of Excel, it was necessary to import the data into SPSS.

Since SPSS has strict naming conventions, the variable names were changed to correspond to this naming function. We changed the variable names as appropriate and documented these changes and the data importing procedures in the data manual. An SPSS program was written and archived so that any operations made to the data, including name changes, could be duplicated at a later date if necessary. Once a change was made to the working SPSS database, a new copy was saved and the older version was stored in an archive folder on the server.

Not all the data used for the social indicator study were received from the Center for Demographic Research. Some data were retrieved directly from the Census and IRS websites. The Census data files were downloaded as Excel files. Relevant Census level variables were then imported into the main SPSS database. The original (2000) IRS text data file was downloaded from the IRS website. The data file was saved on our server. This IRS data file was imported directly into the SPSS database.



Each time a file or data set was imported or transferred to another software package or dataset, cleaning and editing procedures ensured quality, precise data at the time of analysis. Cleaning procedures included checking for missing data, outlying observations, and data editing.

In order to control for differences in population size, rate variables were created in SPSS. Each rate variable was created by dividing the original variable (the count) by the appropriate population and multiplying by 100,000. This enabled us to express very small rates in terms of larger units without changing the statistical properties of the variable. Labels were also created at this time that corresponded with each newly created rate variable. The labels ensured complete understanding of the variable during analyses.

## **ANALYTIC PROCEDURES**

### **Methods Used to Answer Research Questions**

The overarching purpose of this report is to provide information useful to the State for providing prevention services using valid and reliable data. We conceptualized several research questions centering on a step-by-step, empirical evaluation of the validity of our data and the validity of common theoretical constructs used in conceptualizing, categorizing, and summarizing the data. Once these questions were answered, we used the most parsimonious and valid methods to evaluate risk and protection.

#### *Research question 1: How reliable are the indicators?*

We assessed reliability using the most recent three years up to and including the year 2000. The years 1998-2000 were used for the majority of the indicators. Indicators' reliabilities were assessed using two different methods: 1) Cronbach's Alpha (standardized) and 2) an estimate of reliability using the laws of path analysis described in detail by Heise (1969).

Cronbach's alpha can be calculated as the average of the inter-item correlations (here, inter-year correlations) weighted by the number of items (here years, see formula below). The standardized alpha is calculated by using the correlations of the z-scores of the items rather than the raw scores, themselves. Because the overall average is calculated without regard for order, it is possible for alpha to exceed 0.60 even while correlations are low between consecutive years, so long as the correlations between distal years are sufficiently high to increase the average. This creates a false impression of temporal reliability, since conceptually, in a temporally reliable measure, measurements occurring closer in time should be more closely related than those occurring further apart from one another.

Cronbach's Alpha:

$$\frac{\text{Number of years} * \text{average correlation}}{1 + (\text{number of years} - 1) * \text{average correlation}}$$

Heise's method, on the other hand, takes into account the temporal order of the items, assuming that items closer in time should have higher correlations than items that are more distant. It is calculated as the product of the correlations between the sequential years (i.e. 1998 and 1999 correlation and 1999 and 2000 correlation) divided by the correlation between the spaced years (i.e. 1998 and 2000 correlation). As an unfortunate result, it is possible for this measure to exceed 0.60 while still having low inter-year correlations, so long as the correlations between successive years are sufficiently higher than the spaced years. So, while this measure captures the temporal nature of reliability, it does not provide a good estimate of the absolute magnitudes of the relationships between measurements.

Estimate described by Heise (1969):

$$\frac{\text{Years a-b correlation} * \text{years b-c correlation}}{\text{years a-c correlation}}$$

Since both these measures test equally important, but different elements of reliability, we required both measures to exceed 0.60 in order for an indicator to be considered reliable. In this way it was assured that indicators both had high inter-year correlations overall, *and* that sequential years (years closer in time) were more correlated than spaced years (years more distant in time). For variables not measured at 3 consecutive years, such as the U.S. census data, reliability was not assessed, but we included the variables in analyses.

*Research question 2: Is it possible to construct valid indices measuring risk and protection for each of the risk and protective factors in the CSAP model of risk and protection?*

In order to combine individual indicators into valid indices of risk and protection, the indices must demonstrate convergent and divergent validity (Campbell and Fiske, 1959). We used a Modified Multitrait-Multimethod Matrix to assess the convergent and divergent validity in this model (see "Technical Details on the Modified Multitrait-Multimethod Matrix"). In the matrix, indicator reliabilities over time had to be higher than all correlations between indicator pairs and indicators within the same factor had to correlate with each other more than they correlated with indicators outside of the factor. Violations of these criteria would indicate that the model grouped indicators that were less related to each other than they were to other variables. As a result, composite indices based on the model would summarize across indicators that varied independently from one another and not properly represent a summary of a single overarching concept, possibly producing spurious results.

Several indicators on the original list were not included in the matrix. First, we excluded indicators that were unreliable according to Heise's or Cronbach's criteria. These indicators were not stable enough over time to be used in valid indices of risk or protection. Second, there were a number of variables that "overlapped" with other variables. We reviewed these variables and in each case selected only one variable for inclusion. Juvenile pregnancies and juvenile births were two of the overlapping variables. The variable for juvenile pregnancies overlaps with the variable for juvenile births because the data on pregnancies includes data on births. We selected juvenile pregnancies, since juvenile births are encompassed by juvenile pregnancies and were not reliable. Similarly, the variable for adults in treatment encompasses the variable pregnant women in treatment. Since pregnant women in treatment was a subcategory of adults in treatment and was not a reliable variable on its own, we excluded it from the analysis. Data on juveniles living away from home overlapped with data on children in foster care, and we chose to include children in foster care. Our rationale was that children in foster care was a better indicator of family conflict, the underlying concept of interest for these variables.

There were several overlapping arrest variables. Among adults, the variable for drunken driving arrests is encompassed by the variable for alcohol-related arrests. Among youth the variable for juvenile arrests for curfew, vandalism, and disorderly conduct encompasses the variable for vandalism arrests among children aged 10 to 14. In a similar vein, the variable for alcohol-related arrests among juveniles includes data from the variable on alcohol-related arrests among children aged 10 to 14, and the variable for juvenile arrests for property crimes encompasses the variable for arrest for personal and property crimes among children aged 10 to 14. In each of these instances, we selected the broader variable. In other words, we included adult alcohol related arrests, juvenile arrests for curfew, vandalism, and disorderly conduct, juvenile alcohol-related arrests, and juvenile arrests for property crimes. We excluded adult drunken driving arrests, arrests for vandalism among children aged 10 to 14, alcohol-related arrests among children aged 10 to 14, and arrests for personal and property crimes among children aged 10 to 14.

In addition, we excluded net migration, whose theoretical relationship to the overall risk is unclear. Net out-migration may indicate extreme poverty in the county, which is a risk factor. However, a large net in-migration may indicate a high degree of transitions and mobility in the county, which is also a risk factor. Finally, we excluded adults with no high school diploma. During the course of the study, only data from 1990 were available. Data from 2000 were published as this study was concluding and could not be included in some of the more methodologically sophisticated analyses.

*Research question 3: Is it possible to construct valid indices measuring risk and protection for each of the four domains in the CSAP model of risk and protection?*

States in the CSAP Prevention Needs Assessment Program typically categorize risk and protective factors into four domains: family, peer/individual, community, and school. We investigated the validity of indices created by combining indicators from each

domain. First, we assigned a domain to each indicator. We then tested for validity using the methods employed in answering question 2. A Modified Multitrait-Multimethod Matrix to assess the convergent and divergent validity in this model. For this research question, the criterion was that indicators within the same *domain* had to correlate with each other more than they correlated with indicators outside their domain. The implications discussed in the previous section on question two apply to violations of these criteria. The indicators excluded in question 2 were also excluded in this analysis. To review, we excluded net migration and indicators that were unreliable or overlapped with other variables in the model.

*Research question 4: Is it possible to construct valid indices measuring overall risk and overall protection?*

The method for creating indices was contingent upon the results of research question 3. If the MMTMM supported the use of domains by demonstrating convergent and divergent validity between them, domain indices would first be created, and a linear combination of the domain indices would be used to construct overall indices of risk and protection. In this way, each domain would be weighted equally in the summary index rather than each indicator.

As discussed in the results section, the MMTMM did not support the use of domains. In light of this finding, we conducted an exploratory factor analysis. The analysis revealed stable and valid factors, and we used those factors to create overall risk and protective indices. We then tested these indices for predictive validity by regressing them to the prevalence rates of risk gathered from the Alabama Student Survey on Risk and Protective Factors.

*Research question 5: What is the geographic distribution of social indicators in Alabama?*

We used two techniques to examine the geographic distribution of risk and protective factors. First, we ranked counties on each reliable indicator. Tables with the county rankings appear in Appendix C and in a recently published chart book (see Appendix E). Since this study was unable to validate the CSAP classification of risk factors, the tables are organized by the type of data. The data types are:

- Availability of Substances
- Drug and Alcohol Use in the Community
- Education
- Family Characteristics
- Socio-Economic Characteristics
- Crime
- Voting
- Protective Factors

Rankings tables, while useful for comparing counties, do not provide insight on the geographic patterns in the data. Maps, however, provide an excellent visual representation of geographic patterns. For this study we mapped each reliable indicator (see Appendix D). The mapping software divided the data for each indicator into five categories with equal ranges. Each category was assigned a shade, with darker shades representing higher rates. Counties that are in metropolitan statistical areas have thicker borders than counties in non-metropolitan statistical areas in order to highlight any possible effect of urbanicity.

*Research question 6: Which science-based prevention programs are recommended based on the social indicator data?*

Using information on need gleaned from the social indicator data, we developed tables to recommend science-based programs. Prevention programs were selected from the Western Center for Application Technology's (CAPT) list of best practices. The list is published on the Internet (<http://www.unr.edu/westcapt/bestpractices/bestprac.htm>). Best practices are defined by the Western CAPT as the practices and programs deemed effective by any one of the following agencies:

- The National Institute on Drug Abuse (NIDA)
- The Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Substance Abuse Prevention (CSAP)
- The National Center for the Advancement of Prevention (NCAP)
- The Office of Juvenile Justice and Delinquency Prevention (OJJDP)
- The Centers for Disease Control and Prevention (CDC)

To match social indicators with the most appropriate programs, we reviewed a brief description of each program. For programs found effective by SAMHSA, we obtained brief descriptions from SAMHSA's Web page on model programs. The Web address for this site is <http://modelprograms.samhsa.gov>. The Western CAPT's Web site provides descriptions of programs endorsed by other agencies.<sup>3</sup> We deemed a program to match a particular social indicator if it met one of two criteria. The first criterion was that the program was shown to reduce the behaviors reflected by the indicator. The second criterion was that the program was designed for or adapted to the specific needs of the target population associated with the indicator.

Table B-1 in Appendix B shows the programs matching each social indicator. Separate columns in the table show which programs met the first criterion (reducing behaviors reflected by the indicator) and which programs met the second criterion (designed for the target population associated with the indicator). Some indicators had more matching programs than others. For example, juvenile arrests for curfew, vandalism, and disorderly conduct had nineteen matching programs, the greatest number among all indicators. Adults without high school diplomas, net migration, new home construction,

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<sup>3</sup> In addition to listing specific programs, the Western CAPT also provides a list of general strategies found effective. We considered these general strategies only in circumstances where no specific program matched the social indicators.

renting households, adult property crime arrests, voting, unemployment, single parent households, and divorce had no matching programs.

To help planners prioritize indicators and programs, we created a table showing the three most “problematic” indicators for each county. We computed standardized scores (z-scores) for each social indicator with at least one matching program. The three social indicators with the most extreme z-scores were labeled as the most problematic. These indicators are displayed in the table along with the programs recommended for each indicator. Planners can use this table, which appears in the results section of this report (see Table 5), to set priorities for specific science-based programs.

### **Technical Details on the Modified Multitrait-Multimethod Matrix (MMTMM)**

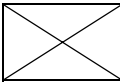
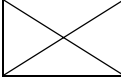
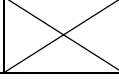
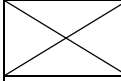
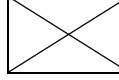

A Multitrait-Multimethod Matrix is an  $n \times n$  matrix ( $n$ = total number of items times the total number of methods used to assess each item) of the inter-item correlations between a set of variables, with estimates of reliability replacing the diagonal. It is designed to assess whether different subsets of the items measure different underlying constructs (construct validity). Generally, several methods are used for assessing each item (pen and paper, oral, etc.). Construct validity is assessed by determining if the inter-item correlations follow a pattern determined by a set of assumptions designed around the concepts of convergent and discriminant validity (see Campbell & Fiske, 1959, for a full review). The estimates of reliability should be the highest of all the values (repeated measures of the same item converge with themselves while discriminating from other items). Once this is established, the next step is to check that items measuring the same factor using different methods correlate more highly than items measuring different factors (items measuring the same factor using different methods converge while they discriminate from items measuring different factors). Finally, correlations between items measuring factors from the same construct should correlate more highly than items measuring factors from a different construct (items within a construct converge while discriminating from items from different constructs).

A Modified Multitrait-Multimethod Matrix is used where different methods were not used in assessing each item. The result is the removal of the patterns and assumptions regarding the method factor, but not affecting the ability to assess convergent and discriminant validity (Trochim, 2000). In our examples, domains represent the theoretical constructs.

**Table 1. A Contrived Example of a Modified MTMM**

		MMTMM					
		Domain 1			Domain 2		
		A1	A2	A3	B1	B2	B3
Domain 1	A1	0.91	0.67	0.75	0.43	0.52	0.27
	A2	0.67	0.89	0.65	0.34	0.48	0.39
	A3	0.75	0.65	0.95	0.21	0.19	0.33
Domain 2	B1	0.43	0.34	0.21	0.92	0.71	0.75
	B2	0.52	0.48	0.19	0.71	0.9	0.81
	B3	0.27	0.39	0.33	0.75	0.81	0.88

**Table 2. A Contrived Example of a Modified MTMM with Domain Sections Split to Indicate Relevant Sections with Domain and Reliability Estimates Removed**

		Domain Summaries					
		Domain 1			Domain 2		
		A1	A2	A3	B1	B2	B3
Domain 1	A1		0.67	0.75	0.43	0.52	0.27
	A2	0.67		0.65	0.34	0.48	0.39
	A3	0.75	0.65		0.21	0.19	0.33
Domain 2	B1	0.43	0.34	0.21		0.71	0.75
	B2	0.52	0.48	0.19	0.71		0.81
	B3	0.27	0.39	0.33	0.75	0.81	

Note: Diagonal crossed out to indicate was not used.

Different methods were not used in gathering the data for the social indicator report. The assumption that reliabilities were higher than inter-item correlations was assessed independently from those assumptions regarding intra-domain (or factor) versus inter-domain (or factor) correlations. As a result, there was one assumption to be met regarding reliability estimates and two assumptions that had to be satisfied to establish the construct validity of the domain indices. A matrix of the inter-item correlations between the reliable social indicator variables was constructed with reliability estimates replacing the diagonal.

Domains (or factors) were evaluated individually, and then summarized. Criteria were set based on the assumption that inter-item correlations between scales in the same domain would have higher correlations than inter-item correlations between scales from different domains. This concept can be envisioned as the amount of overlap between domains.

Each correlation of items within a domain was compared to all correlations of items outside that domain. This was done on a variable by variable (row by row) basis. Each correlation between the current variable and a variable from the same domain (inter-domain) was compared to the correlations between the current variable and the variable from outside the domain (intra-domain). A tally was kept of the number of intra-domain correlations that exceeded the inter-domain correlation as well as the total number of comparisons made. In this way, each non-diagonal cell of the matrix for the inter-domain correlations had a value representing the number of violations of the assumptions as well as the number of opportunities for violations. The total number of violations in the domain divided by the total number of opportunities was used to quantify the degree to which convergent and discriminant validity was violated for each domain.



## RESULTS AND FINDINGS

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### RESEARCH QUESTION 1: HOW RELIABLE ARE THE INDICATORS?

Exactly 22 of the indicators tested for reliability exceeded the minimum criteria for both Cronbach's standardized alpha and Heise's estimate of temporal reliability. Ten of the indicators did not meet either one or both criteria. Homicide rates (alpha = 0.472, Heise = 2.14) failed to pass the criterion for Cronbach's Alpha, indicating an overall low average correlation between the years for which it was assessed. Juvenile arrest rates for violent crimes (alpha = 0.797, Heise = 0.545), juvenile birth rates (alpha = 0.778, Heise = 0.532), event drop out rates (alpha = 0.716, Heise = 0.299), and rates of drop-outs prior to ninth grade (alpha = 0.831, Heise = 0.523) failed to pass the criterion for Heise's method, indicating that correlations measured closer in time were not sufficiently higher than those taken further apart to demonstrate temporal reliability. Arrest rates among youth aged 10 to 14 for vandalism also failed to pass Heise's criterion (alpha = 0.767, Heise = 0.522). Also failing Heise's criterion were arrest rates among youth aged 10 to 14 for alcohol-related offenses (alpha = .728, Heise = .556). Juvenile suicide rates (alpha = 0.583, Heise = 0.138), alcohol-related traffic fatality rates (alpha = 0.032, Heise = 0.033), and pregnant women in substance abuse treatment rates (alpha = 0.510, Heise = 0.564) failed both tests of reliability.

There were ten indicators that were not measured for three consecutive years and so were not tested for reliability. These indicators each had data from 2000 only and are as follows:

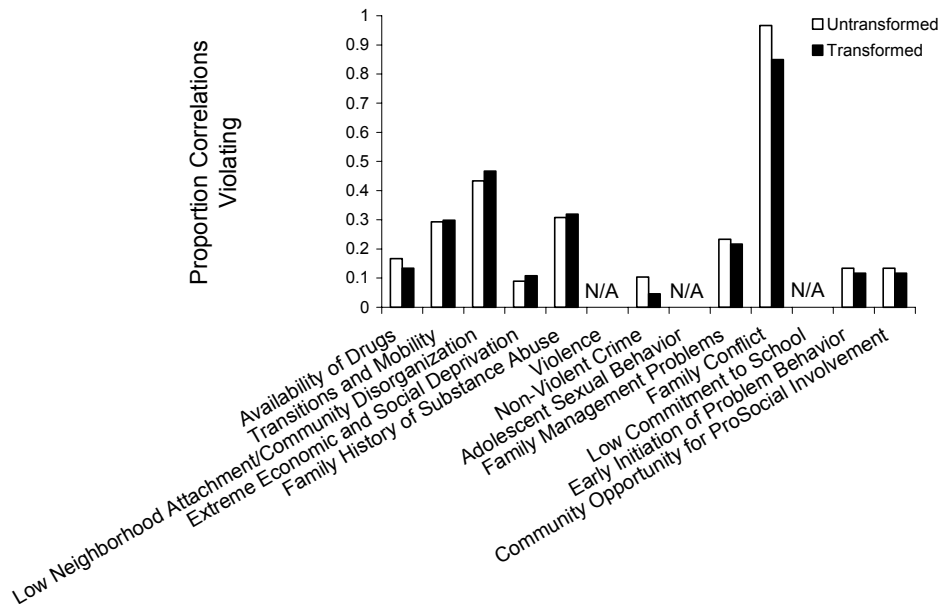
- alcohol sales permits
- tobacco sales permits
- renting households
- voting
- single parent households
- adolescents with no high school diploma
- adults with no high school diploma
- juveniles living away from home
- church organizations
- youth organizations

### RESEARCH QUESTION 2: IS IT POSSIBLE TO CONSTRUCT VALID INDICES MEASURING RISK AND PROTECTION FOR EACH OF THE RISK AND PROTECTIVE FACTORS IN THE CSAP MODEL OF RISK AND PROTECTION?

The standardized Cronbach's Alphas were used as the estimates of reliability for indicators that were compared to the inter-item correlations. A total of only 3 of the possible 713 comparisons (22 indicators with reliability estimates x 31 inter-item

correlations between those indicators and all other indicators), or 0.4% represented violations of the assumption that reliabilities would be higher than inter-item correlations. This represented an acceptable rate of violation, allowing us to test the convergent and discriminant validity of the factors.

### Modified MTMM: Evaluation of Factor Convergent and Divergent Validity



**Figure 1. Degree of convergent and discriminant validity violated in MMTMM by factor.**

Figure 1 shows the degree of convergent and discriminant validity violated in MMTMM, by factor. Each bar represents a factor. Optimally, each factor would have a score of zero, representing no violations of convergent and discriminant validity. Categories marked as N/A contained only one reliable social indicator and so convergent and discriminant validity could not be assessed. While some factors demonstrated better convergent and discriminant validity than others, more than 20% of the inter-factor and intra-factor correlation comparisons violated the assumptions required for validation. In addition, it is important to consider the gains associated with creating factor scores relative to the social indicators themselves. There are relatively few indicators in each factor (most 1-2, 6 at the highest) and so the advantage of averaging within the factor is minimized, particularly when there are indicators in that factor that better correlate with indicators not included in that factor. If the proportion of correlations violating the assumptions for a factor was zero, it could safely be concluded that grouping the indicators into that factor was appropriate. If the proportion of correlations violating the

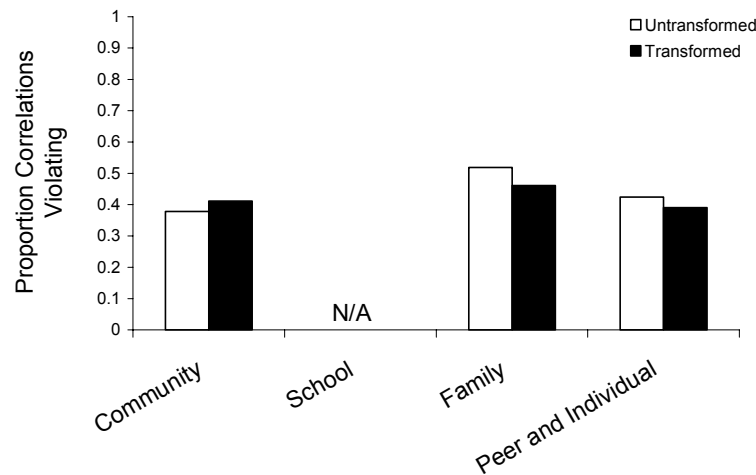
assumptions was higher than zero, then it was necessary to look at the magnitude of the individual correlations.

Consider Non-Violent Crime; while this factor demonstrated the best convergent and discriminant validity, it was composed of only three indicators. The advantage of reducing only three indicators to one factor was lessened by the observation that those indicators correlated to an even higher degree with other indicators not in that factor, including as high as  $r = 0.971$ . As this example represents the best case observed for a factor being accepted, it is clear from the MMTMM that the factors as they were structured failed to be sufficiently validated. As a result, the construction of factor summary measures following this structure was not appropriate. Research question 3 tested whether the indicators would be better suited for data reduction by grouping by domain scores.

### **RESEARCH QUESTION 3: IS IT POSSIBLE TO CONSTRUCT VALID INDICES MEASURING RISK AND PROTECTION FOR EACH OF THE FOUR DOMAINS IN THE CSAP MODEL OF RISK AND PROTECTION?**

The same results that were reported for Question 2 are repeated here, as it applies to both MMTMMs. The standardized Cronbach's Alphas were used as the estimates of reliability for indicators that were compared to the inter-item correlations. A total of only 3 of the possible 713 comparisons (22 indicators with reliability estimates x 31 inter-item correlations between those indicators and all other indicators), or 0.4% represented violations of the assumption that reliabilities would be higher than inter-item correlations. This represented an acceptable rate of violation, allowing for a test of the convergent and discriminant validity of the domains.

## Modified MTMM: Evaluation of Domain Convergent and Divergent Validity



**Figure 2. Degree of convergent and discriminant validity violated in MMTMM by domain.**

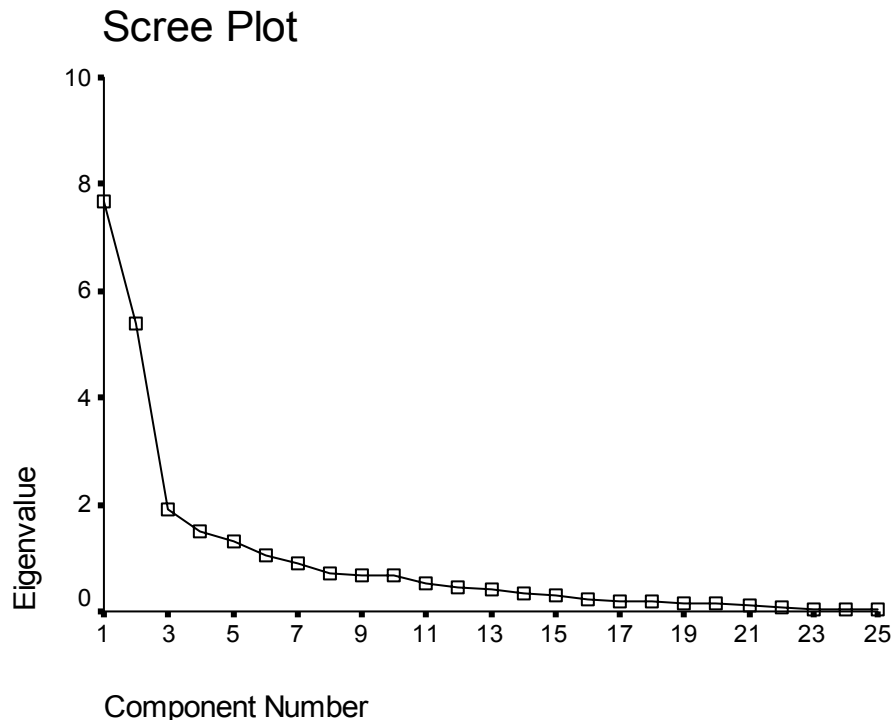
Figure 2 shows the degree of convergent and discriminant validity violated in MMTMM, by domain. Each bar represents a domain. Optimally, each domain would have a score of zero, representing no violations of convergent and discriminant validity. A total of 42.5% of the inter-domain and intra-domain correlation comparisons violated the assumptions necessary. It is clear from the MMTMM that the domains as they were structured failed to be validated. As a result, the construction of domain summary measures following this structure was not appropriate.

## RESEARCH QUESTION 4: IS IT POSSIBLE TO CONSTRUCT VALID INDICES MEASURING OVERALL RISK AND OVERALL PROTECTION?

### Factor analysis

Since the *a priori* defined domain indices failed the Modified MTMM test of their validity, a factor analysis was conducted in an attempt to create summary indices from the social indicators. The best way to avoid indicators canceling each other out is to be assured that only those indicators that correlate with each other are combined. Factor analysis explicitly combines groups of variables into a number of factors based on their correlations with one another, though the underlying constructs associated with the factors created are subject to interpretation.

A total of four factor analyses were conducted, varying the number of factors and the rotation technique: 1) 3-Factor Varimax rotation, 2) 4-Factor Varimax rotation, 3) 3-Factor Oblimin rotation, and 4) 4-Factor Oblimin rotation. Figure 2 (below) shows the scree plots for the two different types of rotation. In both plots, the scree appears to start with factor component 4 or 5. That is, the eigenvalues of these components do not change much from the factor components before them.



**Figure 3. Scree plot from the Factor Analyses.**

A three-factor model was adopted based on the scree plot. This decision was supported by the finding that the fourth factor in the 4-factor models was characterized by low loading on its indicators, and in cases where loadings exceeded .4 often that same indicator loaded to a similar or higher degree on other factors as well.

There were two remaining factor analyses, the 3-factor with varimax rotation and the 3-factor with oblimin rotation. Both these analyses yielded very similar results. Because of this similarity, the varimax rotation was chosen since the factor scores created with this rotation are necessarily orthogonal, better lending them to inclusion in a multivariate regression model.

**Table 3. Correlations between social indicators and extracted factor scores. Only correlations exceeding 0.4 are shown.**

	3-Factor Verimax Rotation		
	1	2	3
Single Parent Families	0.941		
Free/Reduced Lunch Programs	0.924		
Food Stamps	0.919		
TANF	0.892		
Juvenile Pregnancies	0.722		
Alcohol Sales Permits	0.695		
Tobacco Sales Permits	0.688		
Unemployment	0.665		-0.465
Adult Violent Crime Arrests	0.608	0.468	
Divorce			
Families with Children in Foster Care			
Adult Drug-Related Arrests		0.819	
Adult Alcohol-Related Arrests		0.744	
Adult Property Crime Arrests		0.742	0.420
Domestic Violence		0.646	
Juvenile Alcohol-Related Arrests		0.597	
Voting Rate		-0.498	
Prisoners		0.461	
Juvenile Property Crime		0.489	0.763
Rental Households			0.747
New Home Construction			0.732
Juvenile Drug-Related Arrests		0.597	0.689
Juvenile Curfew, Vandalism & Disorderly Arrests		0.568	0.631
Status Dropouts			-0.512
Adults in Treatment			

Only loadings > 0.400 displayed.

Each of the three factors extracted had a distribution with a mean of 0 and a standard deviation of 1. They were rescaled by multiplying each county's score by 10 and adding 50. This shifted the distributions such that they had a mean of 50 and a standard deviation of 10 without changing the proportional differences between counties.

The predictive validity of the extracted risk factors was tested using self-report data collected from youth by the Alabama Student Survey on Risk and Protective Factors, another study in the prevention needs assessment project (Alabama Department of Mental Health and Mental Retardation Substance Abuse Services Division, 2003). The average number of risk scales for which youths were "at risk" was aggregated by county separately for both 6<sup>th</sup> and 10<sup>th</sup> graders. Regression models used the extracted risk factor scores (3), a protection indicator (1) and the interaction of the risk factor and protection scores (3) to predict 6<sup>th</sup> and 10<sup>th</sup> graders' risk levels. Two separate pairs of

regressions were conducted, for a total of four regressions. The pairs were composed of two regressions, one including the youth group rate as the protective indicator and the other including the churches rate as the protective indicator. One pair of regressions was conducted for each grade (6<sup>th</sup> and 10<sup>th</sup>).

**Table 4. Summary of regressions between factor scores and the student survey risk measure.**

Average Number of Risk Scales for which 6th Graders were "At Risk" within the County						Average Number of Risk Scales for which 10th Graders were "At Risk" within the County					
	SS	df	MS	F	p		SS	df	MS	F	p
Model	1.094	7	0.156	0.911	0.504	Model	1.091	7	0.156	1.709	0.126
Residual	9.946	58	0.171			Residual	5.017	55	0.091		
Total	11.040	65				Total	6.108	62			
	B	Std. Error	t	p			B	Std. Error	t	p	
Constant	2.148	0.458	4.687	0.000		Constant	3.804	0.356	10.667	0.000	
Factor 1	0.002	0.005	0.408	0.685		Factor 1	-0.004	0.005	-0.888	0.378	
Factor 2	0.001	0.005	0.172	0.864		Factor 2	0.003	0.004	0.787	0.435	
Factor 3	0.000	0.005	-0.052	0.959		Factor 3	-0.003	0.004	-0.852	0.398	
Youth Groups	0.996	0.441	-1.667	0.101		Youth Groups	-0.007	0.329	-0.021	0.983	
Factor 1*Youth Groups	-0.010	0.006	-0.699	0.487		Factor 1*Youth Groups	-0.011	0.005	-2.059	0.044	
Factor 2*Youth Groups	-0.004	0.006	-1.160	0.251		Factor 2*Youth Groups	-0.008	0.005	-1.721	0.091	
Factor 3*Youth Groups	-0.006	0.006	2.188	0.033		Factor 3*Youth Groups	0.002	0.004	0.579	0.565	

	SS	df	MS	F	p		SS	df	MS	F	p
Model	0.138	7.000	0.020	0.105	0.998	Model	0.677	7.000	0.097	0.979	0.456
Residual	10.920	58.000	0.188			Residual	5.431	55.000	0.099		
Total	11.058	65				Total	6.108	62			
	B	Std. Error	t	p			B	Std. Error	t	p	
Constant	2.128	0.484	4.400	0.000		Constant	3.920	0.368	10.654	0.000	
Factor 1	0.001	0.006	0.111	0.912		Factor 1	-0.008	0.004	-1.842	0.071	
Factor 2	0.001	0.005	0.274	0.785		Factor 2	0.003	0.004	0.686	0.496	
Factor 3	0.001	0.006	0.137	0.892		Factor 3	-0.002	0.004	-0.531	0.598	
Churches	0.031	0.527	0.058	0.954		Churches	-0.001	0.394	-0.002	0.998	
Factor 1*Churches	0.000	0.008	0.005	0.996		Factor 1*Churches	0.000	0.006	-0.035	0.972	
Factor 2*Churches	0.003	0.004	0.658	0.513		Factor 2*Churches	-0.003	0.003	-1.065	0.292	
Factor 3*Churches	-0.004	0.007	-0.529	0.599		Factor 3*Churches	0.003	0.005	0.605	0.548	

Table 4 shows the ANOVA and regression parameter summaries for the factor model predicting youth risk. Counties that did not have respondents for a grade were not included in that grade's analysis. (The counties without respondents in grade 10 were Bullock, Macon, and Russell. All counties had respondents in grade 6). None of the models were able to predict average youth risk by county. As a result, it was concluded that none of the extracted factors, protective indicators, or their interactions had predictive validity in terms of youth risk for substance use. This finding was thoroughly examined for the influence of outliers by verifying that dramatic changes in the parameters did not occur with the removal of one or more counties' data from the analysis. No outlying counties were found.

It is, therefore, our recommendation to address risk and protection for substance abuse on an individual indicator level, and not to pursue a data reduction model. This process will also better enable counties to customize their prevention programs based on their own individual county profile, taking into account specific resources available to them, as well as random variables not readily available from social indicators data.

## RESEARCH QUESTION 5: WHAT IS THE GEOGRAPHIC DISTRIBUTION OF SOCIAL INDICATORS IN ALABAMA?

To examine the geographic distribution of risk and protective factors, we created rankings tables and maps. The rankings tables, which appear in Appendix C, show how counties compare to each other on each indicator. Ranks closer to one represented more favorable outcomes (either less risk or more protection). We assigned the same rank to counties with the same values on an indicator.

Appendix D presents a map of each indicator. The rates for each indicator are classified into five categories with equal ranges. Each category is shown in a shade of gray. The shades of gray grow progressively darker as the rates increase. A thick border surrounds metropolitan statistical areas to highlight possible effects of urbanicity.

The paragraphs below describe the results found in the rankings table and maps. The paragraphs and the tables and maps they describe are organized by the type of data. The data types are:

- Availability of Substances
- Drug and Alcohol Use in the Community
- Education
- Family Characteristics
- Socio-Economic Characteristics
- Crime
- Voting
- Protective Factors

### **Availability of Substances**

*Alcohol Sales Permits: The rate of alcohol sales permits on record, per 100,000 people*

The ten counties with the most Alcohol Sales Permits (in order starting with the most) were Wilcox, Lowndes, Greene, Conecuh, Sumter, Bullock, Perry, Macon, Baldwin, and Choctaw.

Eighteen dry counties without any wet municipalities had no Alcohol Sales Permits. They were Bibb, Blount, Cherokee, Clarke, Clay, Cullman, DeKalb, Fayette, Franklin, Geneva, Lamar, Lawrence, Marion, Monroe, Pickens, Randolph, Washington, and Winston. The ten remaining counties with the fewest Alcohol Sales Permits per 100,000 (in order starting with fewest) were Limestone, Marshall, Walker, Cleburne, Chilton, Lauderdale, Coffee, Jackson, Morgan, and Colbert.

The counties with the most Alcohol Sales Permits per 100,000 were predominately in the southern half of the state, and those with the least were mainly in the northern half of the state.



*Tobacco Sales Permits: The rate of tobacco sales permits on record, per 100,000 people*

The ten counties with the most Tobacco Sales Permits per 100,000 people (in order starting with the highest) were Sumter, Choctaw, Wilcox, Greene, Conecuh, Crenshaw, Macon, Bullock, Perry, and Covington.

The ten counties with the fewest Tobacco Sales Permits per 100,000 people (in order starting with lowest) were Blount, Shelby, Coffee, Jefferson, DeKalb, Limestone, Montgomery, Madison, Bibb, and Franklin.

Counties with the highest rate of Tobacco Sales Permits were generally located in the southern area of the state. Six of the counties with the lowest rates of permits were metropolitan statistical areas, while the other four border metropolitan statistical areas. Eight counties were ranked among the highest ten in both Alcohol Sales Permits and Tobacco Sales Permits.

### **Drug and Alcohol Use in the Community**

*Adult Alcohol-Related Arrests: The rate of adult arrests for alcohol-related crimes, per 100,000 adults (age 18 and older)*

The ten counties having the highest Adult Alcohol-Related Arrest rates (in order starting with the highest) were Marshall, Colbert, Jackson, Limestone, Morgan, Franklin, Tallapoosa, Walker, Marion, and Randolph.

The ten counties having the lowest Adult Alcohol-Related Arrest rates (in order starting with the lowest) were Choctaw, Perry, Bibb, Montgomery, Lamar, Greene, Wilcox, Hale, Jefferson, and Dallas.

Nine of the highest counties on Adult Alcohol-Related Arrest rates (Marshall, Colbert, Jackson, Limestone, Morgan, Franklin, Walker, Marion, and Randolph) were actually either dry counties without wet municipalities or scored among the ten lowest in Alcohol Sales Permits. Similarly, Choctaw, Greene, Perry, and Wilcox counties all were in the ten highest for Alcohol Sales Permits, but were in the ten lowest in terms of Adult Alcohol Related Arrests. These results suggest that more than the simple availability of alcohol is contributing to Adult Alcohol-Related Arrests.

*Adult Drug-Related Arrests: The rate of adult arrests for drug-related crimes, per 100,000 adults (age 18 and older)*

The ten counties with the highest rates for Adult Drug-Related Arrests (in order starting with the highest) were Houston, Henry, Barbour, Pike, Russell, Chambers, Dale, Etowah, Marshall, and Autauga.

The ten counties with the lowest rates for Adult Drug-Related Arrests (in order starting with the lowest) were Bibb, Lamar, Perry, Hale, Choctaw, DeKalb, Bullock, Cherokee, Greene, and Saint Clair.

Rates for Adult Drug-Related Arrests appeared to be highest in Houston and in several counties north of Houston.

*Adult Drunk Driving Arrests: The rate of adult arrests for drunken driving, per 100,000 adults (age 18 and older)*

The ten counties with the highest Adult Drunk Driving Arrest rates (in order starting with the highest) were Limestone, Cleburne, Conecuh, Chambers, Lowndes, Colbert, Tallapoosa, Houston, Dale, and Lee.

The ten counties with the lowest Adult Drunk Driving Arrest rates (in order starting with the lowest) were Choctaw, Perry, Bibb, Montgomery, Lamar, Jefferson, Cherokee, Greene, Dallas, and Hale.

Rates of Adult Drunk Driving Arrests appeared to be lower in dry counties, although there were exceptions. Most of the counties with the lowest rates were located in the western portion of the state.

*Adults in Substance Abuse Treatment: The rate of adults in State-supported AOD treatment programs, per 100,000 adults (18 and older)*

The ten counties with the highest Adults in Substance Abuse Treatment rates (in order starting with highest) were Jefferson, Dallas, DeKalb, Covington, Montgomery, Walker, Tuscaloosa, Marengo, Calhoun, and Marshall.

The ten counties with the lowest Adults in Substance Abuse Treatment rates (in order starting with the lowest) were Washington, Clarke, Choctaw, Limestone, Blount, Bullock, Randolph, Macon, Coosa, and Monroe.

The counties with the highest rates of Adults in Substance Abuse Treatment generally corresponded to those counties that had substance treatment facilities.

*Juvenile Alcohol-Related Arrests: The rate of juvenile arrests for alcohol violations, per 100,000 juveniles (age 10-17)*

The ten counties with the highest Juvenile Alcohol-Related Arrest rates (in order starting with the highest) were Autauga, Tallapoosa, Baldwin, Fayette, Lauderdale, Dale, Houston, Morgan, Barbour, and Marshall.

The ten counties with the lowest Juvenile Alcohol-Related Arrest rates (in order starting with the lowest) were Bibb\*, Bullock\*, Choctaw\*, Greene\*, Lamar\*, Lawrence\*, Wilcox\*,

Winston\*, Montgomery, and Hale (asterisk \* denotes eight-way tie for 1<sup>st</sup> place, presented in alphabetical order).

Metropolitan statistical areas (MSA) generally had higher rates of Juvenile Alcohol-Related Arrests, although there were exceptions. Counties with higher proportions of minorities had lower rates, including those that were in metropolitan statistical areas.

*Juvenile Drug-Related Arrests: The rate of juvenile arrests for drug law violations, per 100,000 juveniles (age 10-17)*

The ten counties with the highest Juvenile Drug-Related Arrest rates (in order starting with the highest) were Barbour, Chambers, Houston, Madison, Tuscaloosa, Dale, Autauga, Mobile, Baldwin, and Morgan.

The ten counties with the lowest Juvenile Drug-Related Arrest rates (in order starting with the lowest) were Bibb\*, Choctaw\*, Hale\*, Lamar\*, Lowndes\*, Perry\*, Winston\*, Jackson, Washington, and Cleburne (asterisk \* denotes seven-way tie for 1<sup>st</sup> place, presented in alphabetical order).

Metropolitan statistical areas consistently had the highest rates for Juvenile Drug-Related Arrests with one exception, Shelby County. Shelby County differs most dramatically from other counties in terms of income, having the highest median income. In addition, dry counties generally had the lowest rates.

## **Education**

*Adolescents without a High School Diploma: The rate of adolescents age 16-19, who have not completed high school and are not enrolled in school, per 100,000 adolescents*

The ten counties with the highest rates of Adolescents without a High School Diploma (in order starting with the highest) were Marshall, DeKalb, Greene, Franklin, Lawrence, Cherokee, Cleburne, Barbour, Escambia, and Blount.

The ten counties with the lowest rates of Adolescents without a High School Diploma (in order starting with the lowest) were Lee, Shelby, Dale, Lamar, Tuscaloosa, Macon, Choctaw, Autauga, Crenshaw, and Perry.

Seven of the ten counties with the highest rates of Adolescents without a High School Diploma were in the northern part of the state, while counties with the lowest dropout rates were scattered throughout Alabama.

*Adults without a High School Diploma: The rate of people age 25 and older with no high school diploma, per 100,000 people aged 25 and over*

The ten counties with the highest rates of Adults without a High School Diploma (in order starting with the highest) were Wilcox, Crenshaw, Bullock, Randolph, Franklin, Perry, Winston, Cleburne, Marion, and Bibb.

The ten counties with the lowest rates of Adults without a High School Diploma (in order starting with the lowest) were Shelby, Madison, Baldwin, Lee, Jefferson, Montgomery, Tuscaloosa, Autauga, Dale, and Elmore.

Metropolitan statistical areas had the lowest rates of Adults without High School Diplomas.

### **Family Characteristics**

*Adolescent Pregnancies: The rate of adolescent pregnancies, per 100,000 adolescent females (age 10-17)*

The ten counties with the highest Adolescent Pregnancy rates (in order starting with the highest) were Dallas, Pike, Bullock, Macon, Greene, Barbour, Perry, Pickens, Lowndes, and Montgomery.

The ten counties with the lowest Adolescent Pregnancy rates (in order starting with the lowest) were Lamar, Shelby, Lauderdale, Blount, Franklin, Lawrence, Marion, Saint Clair, Conecuh, and Baldwin.

Adolescent Pregnancy rates were higher in southern parts of the state and lower in metropolitan statistical areas, except for Montgomery.

*Children in Foster Care: The average daily rate of children in State-supervised, family-based foster care, per 100,000 children (age 0-17)*

The ten counties with the highest Children in Foster Care rates (in order starting with the highest) were Randolph, Conecuh, Greene, Calhoun, Houston, Macon, Etowah, Cullman, Butler, and Clay.

The ten counties with the lowest Children in Foster Care rates (in order starting with the lowest) were Barbour, Covington, Marion, Colbert, Elmore, Winston, Limestone, Shelby, Clarke, and Monroe.

These rates did not appear to follow any geographic pattern.

*Children Living Away From Parents: The rate of children living in home situations other than with one or both parents or guardians, per 100,000 children (age 0-17)*

The ten counties with the highest rates of Children Living Away From Parents (in order starting with the highest) were Macon, Lowndes, Greene, Sumter, Perry, Wilcox, Dallas, Chambers, Bullock, and Pickens.

The ten counties with the lowest rates of Children Living Away From Parents (in order starting with the lowest) were Shelby, Lauderdale, Winston, Lamar, Limestone, Dale, Morgan, Madison, Cullman, and Marion.

The rate of Children Living Away from Parents most closely followed the racial profile of the county. Counties with high proportions of minorities generally had higher rates. None of the counties with the top ten highest rates were metropolitan statistical areas (MSAs), while five of the ten lowest were MSAs.

*Divorce: The rate of divorce (dissolutions and annulments), per 100,000 people*

The ten counties with the highest Divorce rates (in order starting with the highest) were Dale, Houston, Marshall, Russell, Marion, Winston, Etowah, Calhoun, Talladega, and Cullman.

The ten counties with the lowest Divorce rates (in order starting with the lowest) were Blount, Wilcox, Greene, Pickens, Macon, Coosa, Limestone, Covington, Perry, and Bullock.

Divorce rates tended to be higher in MSAs and across the north and southeast. Counties with larger proportions of minorities tended to have lower Divorce rates, while lower income counties with lower proportions of minorities had higher rates of Divorce.

*Single-Parent Households: The rate of family households with spouse absent, per 100,000 family households*

The ten counties with the highest Single-Parent Household rates (in order starting with the highest) were Bullock, Macon, Greene, Perry, Dallas, Sumter, Wilcox, Lowndes, Hale, and Russell.

The ten counties with the lowest Single-Parent Household rates (in order starting with the lowest) were Shelby, Blount, Cleburne, Cullman, Saint Clair, Cherokee, Limestone, Marion, Winston, and DeKalb.

Metropolitan statistical areas tended to have lower rates of Single-Parent Households, with the exception of Jefferson and Montgomery.

### **Socio-Economic Characteristics**

*Food Stamp Recipients: The average monthly number of food stamp recipients, per 100,000 population*

The ten counties with the highest Food Stamp Recipient rates (in order starting with the highest) were Wilcox, Perry, Greene, Macon, Lowndes, Sumter, Dallas, Conecuh, Bullock, and Clarke.

The ten counties with the lowest Food Stamp Recipient rates (in order starting with the lowest) were Shelby, Baldwin, Morgan, Cullman, Madison, Lee, Blount, Clay, Walker, and Elmore.

The rate of Food Stamp Recipients generally followed the median income for the county.

*Free and Reduced Price Lunches: The rate of students in the public schools (K-12) receiving free or reduced price lunches, per 100,000 students*

The ten counties with the highest Free and Reduced Price Lunch rates (in order starting with the highest) were Wilcox, Lowndes, Greene, Perry, Bullock, Conecuh, Dallas, Hale, Macon, and Choctaw.

The ten counties with the lowest Free and Reduced Price Lunch rates (in order starting with the lowest) were Shelby, Madison, Baldwin, Limestone, Morgan, Blount, Fayette, Autauga, Lauderdale, and Saint Clair.

Like Food Stamps, the rate of Free and Reduced Price Lunches appeared to follow income. That is, counties with higher median incomes had lower rates. A notable exception to this pattern is the observation that counties with lower median incomes that had lower proportions of minorities also evinced lower rates of Free and Reduced Price Lunches.

*Migration into the County: The rate of the difference between the number of new residents in the area minus the number of residents who moved out of an area, per 100,000 population*

The ten counties with the highest rates of Migration into the County (in order starting with the highest) were Shelby, Baldwin, Blount, Cleburne, Elmore, Saint Clair, Bibb, Autauga, Lee, and Chilton.

The ten counties with the lowest rates of Migration into the County (in order starting with the lowest) were Sumter, Greene, Russell, Choctaw, Monroe, Macon, Dale, Montgomery, Dallas, and Wilcox. These counties all experienced a net migration out of the county.

The trend is for people to migrate out of counties with large cities and into the surrounding area. This effect is most pronounced in Jefferson County.

*New Home Construction: The number of new building permits issued for new private housing units, per 100,000 population*

The ten counties with the highest New Home Construction rates (in order starting with the highest) were Baldwin, Shelby, Tuscaloosa, Elmore, Autauga, Lee, Jefferson, Montgomery, Mobile, and Coffee.

The ten counties with the lowest New Home Construction rates (in order starting with the lowest) were Randolph\*, Wilcox\*, Hale, Winston, Washington, Coosa, Bullock,

Choctaw, Conecuh, and Lowndes (asterisk \* denotes two-way tie for 1<sup>st</sup> place, presented in alphabetical order).

New Home Construction rates were highest in metropolitan statistical areas, but not necessarily for those that had the highest rates of Migration into the County. It appears that New Home Construction is most closely tied to high median incomes.

*Renting Households: The rate of households living in rental housing, per 100,000 households*

The ten counties with the highest rates of Renting Households (in order starting with the highest) were Lee, Russell, Tuscaloosa, Montgomery, Dale, Dallas, Jefferson, Pike, Macon, and Mobile.

The ten counties with the lowest rates of Renting Households (in order starting with the lowest) were Washington, Choctaw, Coosa, Saint Clair, Blount, Lowndes, Wilcox, Lawrence, Chilton, and Cherokee.

The rate of Renting Households was most closely tied to the location of metropolitan statistical areas, in particular those with large cities.

*Temporary Assistance for Needy Families (TANF): The rate of persons participating in the TANF program, per 100,000 population*

The ten counties with the highest TANF rates (in order starting with the highest) were Wilcox, Sumter, Conecuh, Perry, Macon, Dallas, Bullock, Clarke, Lowndes, and Marengo.

The ten counties with the lowest TANF rates (in order starting with the lowest) were Shelby, Baldwin, Colbert, Cullman, Jackson, Marion, Lauderdale, Morgan, Etowah, and Cleburne.

Participation in the TANF program tended to be higher in the southern parts of the state, with Baldwin County as a notable exception.

*Unemployment: The rate of unemployed people in the labor force, per 100,000 people in the labor force*

The ten counties with the highest Unemployment rates (in order starting with the highest) were Wilcox, Washington, Butler, Greene, Lowndes, Sumter, Monroe, Dallas, Bullock, and Perry.

The ten counties with the lowest Unemployment rates (in order starting with the lowest) were Shelby, Tuscaloosa, Blount, Madison, Baldwin, Saint Clair, Elmore, Jefferson, Lee, and Autauga.

Unemployment rates were lowest in metropolitan statistical areas and highest in lower income counties with higher proportions of minorities. Lower income counties with high proportions of minorities had higher Unemployment rates than lower income counties with low proportions of minorities.

## **Crime**

*Arrests for Family Offenses: The rate of arrests for family offenses arrests, per 100,000 adults (age 18 and older)*

The ten counties with the highest rates of Arrests for Family Offenses (in order starting with the highest) were Pickens, Winston, Limestone, Houston, Cullman, Etowah, Crenshaw, Autauga, Henry, and Marion.

The ten counties with the lowest rates of Arrests for Family Offenses (in order starting with the lowest) were Bibb\*, Bullock\*, Choctaw\*, Washington\*, Jefferson, Tuscaloosa, Lamar, Mobile, Fayette, and Clarke (asterisk\* denotes four-way tie for 1<sup>st</sup> place, presented in alphabetical order).

Arrests for Family Offenses did not appear to have any discernable geographic pattern.

*Prisoners: The rate of new admissions to Alabama State prisons, by prisoner's county of residence, per 100,000 people*

The ten counties with the highest Prisoner rates (in order starting with the highest) were Russell, Conecuh, Randolph, Houston, Dallas, Bullock, Montgomery, Monroe, Chambers, and Covington.

The ten counties with the lowest Prisoner rates (in order starting with the lowest) were Sumter, Bibb, Hale, Wilcox, Shelby, Greene, Marengo, Cleburne, Dale, and Macon.

Prisoner rates do not seem to vary by median income, race, geographic location, wet/dry or metropolitan statistical area status. They also were not well predicted by having correctional facilities or work release programs in the county.

*Adult Property Crime Arrests: The rate of adult arrests for property crimes, per 100,000 adults (age 18 and older)*

The ten counties with the highest Adult Property Crime Arrest rates (in order starting with the highest) were Russell, Calhoun, Autauga, Tuscaloosa, Mobile, Macon, Houston, Coffee, Tallapoosa, and Walker.

The ten counties with the lowest Adult Property Crime Arrest rates (in order starting with the lowest) were Bibb, Lamar, Hale, Perry, Choctaw, Washington, Cherokee, Blount, Conecuh, and DeKalb.



Adult Property Crime Arrest rates were highest in metropolitan statistical areas and lowest in dry, non-metropolitan counties.

*Adult Violent Crime Arrests: The rate of adult arrests for violent crimes, per 100,000 adults (age 18 and older)*

The ten counties with the highest Adult Violent Crime Arrest rates (in order starting with the highest) were Wilcox, Monroe, Lowndes, Escambia, Crenshaw, Russell, Greene, Mobile, Macon, and Dallas.

The ten counties with the lowest Adult Violent Crime Arrest rates (in order starting with the lowest) were Bibb, Cherokee, Lamar, DeKalb, Blount, Hale, Lawrence, Washington, Clay, and Talladega.

Adult Violent Crime Arrest rates were lower in the northern dry counties and higher in lower income counties with a high proportion of minorities.

*Juvenile Curfew, Vandalism, and Disorderly Arrests: The juvenile arrest rate for curfew, vandalism, and disorderly conduct, per 100,000 juveniles (ages 10-17)*

The ten counties with the highest Juvenile Curfew, Vandalism, and Disorderly Arrests rates (in order starting with the highest) were Houston, Butler, Autauga, Madison, Mobile, Chambers, Macon, Lauderdale, Dale, and Talladega.

The ten counties with the lowest Juvenile Curfew, Vandalism, and Disorderly Arrests rates (in order starting with the lowest) were Bibb\*, Choctaw\*, Clay\*, Lamar\*, Perry\*, Randolph\*, Winston\*, Lawrence, Shelby, and Cherokee (asterisk \* denotes seven-way tie for 1<sup>st</sup> place, all with zero arrests).

These rates were highest in the metropolitan statistical areas and lowest in dry counties.

*Juvenile Property Crime Arrests: The juvenile arrest rate for property crimes, per 100,000 juveniles (age 10-17)*

The ten counties with the highest Juvenile Property Crime Arrests rates (in order starting with the highest) were Tuscaloosa, Autauga, Houston, Mobile, Madison, Lee, Jefferson, Lauderdale, Morgan, and Tallapoosa.

The ten counties with the lowest Juvenile Property Crime Arrests rates (in order starting with the lowest) were Bibb\*, Choctaw\*, Clay\*, Hale\*, Lamar\*, Lowndes\*, Lawrence, Cleburne, Jackson, and Perry (asterisk \* denotes six-way tie for 1<sup>st</sup> place, presented in alphabetical order).

Rates for Juvenile Property Crime Arrests were highest in metropolitan statistical areas and lowest in the northern dry counties.

*Personal and Property Crime Arrests for Juveniles Aged 10 to 14: The arrest rate for property crimes among juveniles aged 10 to 14, per 100,000 juveniles aged 10-14*

The ten counties with the highest rates of Personal and Property Crime Arrests for Juveniles Aged 10 to 14 (in order starting with the highest) were Tuscaloosa, Autauga, Houston, Mobile, Lee, Madison, Tallapoosa, Jefferson, Barbour, and Montgomery.

The ten counties with the lowest rates of Personal and Property Crime Arrests for Juveniles Aged 10 to 14 (in order starting with the lowest) were Bibb\*, Cherokee\*, Choctaw\*, Clay\*, Cleburne\*, Coosa\*, Hale\*, Lamar\*, Lawrence\*, Lowndes\*, Pickens\*, Randolph\*, and Winston\* (asterisk \* denotes a 13-way tie for 1<sup>st</sup> place, presented in alphabetical order).

Rates of Personal and Property Crime Arrests for Juveniles Aged 10 to 14 followed a geographic pattern similar to that of Juvenile Property Crime Arrests. The rates were highest in metropolitan statistical areas and lowest in the northern dry counties.

### **Voting**

*Voters: The rate of the population who voted in the November election of the referent year, per 100,000 adults (age 18 and over)*

The ten counties with the lowest rates of Voters (in order starting with the lowest) were Barbour, Escambia, Russell, DeKalb, Cherokee, Talladega, Chambers, Lee, Jackson, and Dale.

The ten counties with the highest rates of Voters (in order starting with the highest) were Perry, Lowndes, Hale, Choctaw, Greene, Lamar, Marengo, Washington, Shelby, and Sumter.

The rate of Voters was highest in the southwest and lowest along the eastern border.

### **Protective Factors**

*Church Organizations: The rate of church-related non-profit organizations, per 100,000 people*

The ten counties with the lowest Church Organizations rates (in order starting with the lowest) were Randolph, Lamar, Coosa, Pike, Hale, Jackson, Cleburne, Limestone, Autauga, and Winston.

The ten counties with the highest Church Organization rates (in order starting with the highest) were Choctaw, Houston, Washington, Escambia, Conecuh, Bibb, Lowndes, Marengo, Baldwin, and Henry.

Church Organizations were mostly densely distributed across the southern part of the state.

*Youth Organizations: The rate of non-profit organizations that serve youth, per 100,000 youth (age 10-17)*

The ten counties with the lowest Youth Organization rates (in order starting with the lowest) were Cleburne, Cherokee, Fayette, Saint Clair, Bullock, Coosa, Jackson, Mobile, Coffee, and Autauga.

The ten counties with the highest Youth Organization rates (in order starting with the highest) were Randolph, Clay, Houston, Conecuh, Morgan, Pike, Wilcox, Winston, Lauderdale, and Washington.

Youth Organizations were most densely distributed in the south, although this effect was less strong than with Church Organizations.

## **RESEARCH QUESTION 6: WHICH SCIENCE-BASED PREVENTION PROGRAMS ARE RECOMMENDED BASED ON THE SOCIAL INDICATOR DATA?**

### **Recommendations for Optimal Mix of Services**

We developed a table linking social indicators with the appropriate science-based programs. Table 5 on the next page shows the indicators to target and the recommended programs for each county. A program key appears at the end of the table, explaining each acronym. A summary of the results appears after the table.

**Table 5. Recommended Model Programs**

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Autauga	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile arrests for curfew, vandalism, disorderly conduct	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Baldwin	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Barbour	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adult drug-related arrests	CCAA
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Bibb	Children in foster care	NP, MTFC, PSP, QOP, RTC
	Food stamp recipients	QOP, RTC
	Free and reduced price lunch	QOP, RTC
Blount	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile arrests for curfew, vandalism, disorderly conduct	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
Bullock	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Free and reduced price lunch	QOP, RTC
	TANF participants	NFP, QOP, RTC

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Butler	Children in foster care	NP, MTFC, PSP, QOP, RTC
	Free and reduced price lunch	QOP, RTC
	Juvenile arrests for curfew, vandalism, disorderly conduct	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
Calhoun	Adults in substance abuse treatment	NP
	Children in foster care	NP, MTFC, PSP, QOP, RTC
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Chambers	Adult drug-related arrests	CCAA
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	State prisoners	NP
Cherokee	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adults in substance abuse treatment	NP
Chilton	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Adult violent crime arrests	BASICS, CBT-CATS
	Adults in substance abuse treatment	NP
Choctaw	Alcohol sales permits	CCAA, CMCA, CTIRHRD
	Free and reduced price lunch	QOP, RTC
	Tobacco sales permits	RDI
Clarke	Food stamp recipients	QOP, RTC
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
	TANF participants	NFP, QOP, RTC

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Clay	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Children in foster care	NP, MTFC, PSP, QOP, RTC
	State prisoners	NP
Cleburne	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Adult drug-related arrests	CCAA
Coffee	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Colbert	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Conecuh	Children in foster care	NP, MTFC, PSP, QOP, RTC
	State prisoners	NP
	TANF participants	NFP, QOP, RTC
Coosa	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adult drug-related arrests	CCAA
	State prisoners	NP
Covington	Adults in substance abuse treatment	NP
	State prisoners	NP
	Tobacco sales permits	RDI
Crenshaw	Adult violent crime arrests	BASICS, CBT-CATS
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	Tobacco sales permits	RDI

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Cullman	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	Children in foster care	NP, MTFC, PSP, QOP, RTC
Dale	Adult drug-related arrests	CCAA
	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Dallas	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adults in substance abuse treatment	NP
	TANF participants	NFP, QOP, RTC
DeKalb	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adults in substance abuse treatment	NP
Elmore	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Escambia	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult violent crime arrests	BASICS, CBT-CATS
	Alcohol sales permits	CCAA, CMCA, CTIRHRD
Etowah	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	Children in foster care	NP, MTFC, PSP, QOP, RTC
Fayette	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adults in substance abuse treatment	NP
	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Franklin	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Geneva	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
Greene	Children in foster care	NP, MTFC, PSP, QOP, RTC
	Food stamp recipients	QOP, RTC
	Free and reduced price lunch	QOP, RTC
Hale	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Food stamp recipients	QOP, RTC
	Free and reduced price lunch	QOP, RTC
Henry	Adult drug-related arrests	CCAA
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Houston	Adult drug-related arrests	CCAA
	Juvenile arrests for curfew, vandalism, disorderly conduct	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Jackson	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Adults in substance abuse treatment	NP
	Tobacco sales permits	RDI



<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Jefferson	Adults in substance abuse treatment	NP
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Lamar	Adults in substance abuse treatment	NP
	Children in foster care	NP, MTFC, PSP, QOP, RTC
	Tobacco sales permits	RDI
Lauderdale	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Lawrence	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
Lee	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Limestone	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Lowndes	Adult violent crime arrests	BASICS, CBT-CATS
	Alcohol sales permits	CCAA, CMCA, CTIRHRD
	Free and reduced price lunch	QOP, RTC
Macon	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Food stamp recipients	QOP, RTC
	TANF participants	NFP, QOP, RTC

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Madison	Juvenile arrests for curfew, vandalism, disorderly conduct	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Marengo	Adults in substance abuse treatment	NP
	Free and reduced price lunch	QOP, RTC
	TANF participants	NFP, QOP, RTC
Marion	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
Marshall	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Adults in substance abuse treatment	NP
Mobile	Adult violent crime arrests	BASICS, CBT-CATS
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Monroe	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Adult violent crime arrests	BASICS, CBT-CATS
	State prisoners	NP
Montgomery	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adults in substance abuse treatment	NP
	State prisoners	NP

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Morgan	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Perry	Food stamp recipients	QOP, RTC
	Free and reduced price lunch	QOP, RTC
	TANF participants	NFP, QOP, RTC
Pickens	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	Free and reduced price lunch	QOP, RTC
Pike	Adolescent pregnancies	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	Adult drug-related arrests	CCAA
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
Randolph	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Children in foster care	NP, MTFC, PSP, QOP, RTC
	State prisoners	NP
Russell	Adult drug-related arrests	CCAA
	Adult violent crime arrests	BASICS, CBT-CATS
	State prisoners	NP
Saint Clair	Adolescents without high school diplomas	LRP, PP, PSTATUS, QOP, RYP
	Alcohol sales permits	CCAA, CMCA, CTIRHRD
	State prisoners	NP
Shelby	Adults in substance abuse treatment	NP
	Alcohol sales permits	CCAA, CMCA, CTIRHRD
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT

<b>County</b>	<b>Social Indicators to Target</b>	<b>Recommended Programs</b>
Sumter	Food stamp recipients	QOP, RTC
	TANF participants	NFP, QOP, RTC
	Tobacco sales permits	RDI
Talladega	Adult drug-related arrests	CCAA
	Adults in substance abuse treatment	NP
	Children in foster care	NP, MTFC, PSP, QOP, RTC
Tallapoosa	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Juvenile alcohol-related arrests	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Tuscaloosa	Adults in substance abuse treatment	NP
	Juvenile drug-related arrests	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS, PSUCCESS
	Juvenile property crime arrests	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Walker	Adult alcohol-related arrests	BASICS, CCAA, CTIRHRD, PYPM
	Adult drug-related arrests	CCAA
	Adults in substance abuse treatment	NP
Washington	Food stamp recipients	QOP, RTC
	Free and reduced price lunch	QOP, RTC
	TANF participants	NFP, QOP, RTC
Wilcox	Adult violent crime arrests	BASICS, CBT-CATS
	Food stamp recipients	QOP, RTC
	TANF participants	NFP, QOP, RTC
Winston	Adult violent crime arrests	BASICS, CBT-CATS
	Arrests for family offenses	CBT-CATS, HFA, HNC, NP, PAT
	State prisoners	NP

**Table 6. Program Key**

<b>Abbreviation</b>	<b>Program Name</b>
ABC	Any Baby Can Prenatal Education Program
AP	Al's Pals: Kids Making Healthy Choices
ATLAS	Athletes Training and Learning to Avoid Steroids
ATP	Adolescent Transitions Program
BASICS	Brief Alcohol Screening and Intervention for College Students
BSFT	Brief Strategic Family Therapy
CBT-CATS	Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress
CCAA	Challenging College Alcohol Abuse
CICC	CICC's Effective Black Parenting Program
CMCA	Communities Mobilizing for Change on Alcohol
CTIRHRD	Community Trials Intervention to Reduce High-Risk Drinking
ER	Early Risers <i>Skills for Success</i>
FET	Family Effectiveness Training
FFT	Functional Family Therapy Program
HFA	Healthy Families America
HNC	Helping the Non-Compliant Child: Parenting and Family Skills Program
IY	Incredible Years
LRP	Leadership and Resiliency Program
MAYM	Meld for African-American Young Mothers
MGF	Meld for Growing Families
MTFC	Multidimensional Treatment Foster Care Program
MYD	Meld for Young Dads
MYM	Meld for Young Moms
NFP	Nurse-Family Partnership
NP	Nurturing Program
OBP	Olweus Bullying Prevention
PA	Positive Action
PAT	Parents as Teachers
PATHS	Promoting Alternative THinking Strategies
PC	Project CARE
PP	Project PATHE
PSP	Parenting Skills Program
PSTATUS	Project STATUS
PSUCCESS	Project SUCCESS
PW	Parenting Wisely
PWC	Parents Who Care: Drug Prevention for Parents of Adolescents
PYPM	Protecting You/Protecting Me
QOP	Quantum Opportunities Program
RDI	Retailer-Directed Interventions
RTC	Raising a Thinking Child: I Can Problem Solve Program for Families
RYP	Reconnecting Youth Program
SSDP	Seattle Social Development Project

### Summary of Recommended Programs

Inspection of Table 5 reveals that some programs were recommended more frequently throughout the State than others. The Nurturing Program (NP) and the Quantum Opportunities Program (QOP) were recommended for 81% of Alabama's counties. These programs matched a number of social indicators, causing them to be widely recommended throughout the State. Project PATHE (PP) and Project STATUS (PSTATUS) were the second most popular programs and were recommended for 57%

of the State's counties. These two highly similar programs were developed by the same institute (the Center for the Study and Prevention of Violence, Institute of Behavioral Science at the University of Colorado) and have been shown to prevent dropping out and delinquency through organizational change in schools. Their frequent recommendation was due to the fact that these two programs matched a number of indicators related to dropping out and delinquency.

A caveat regarding Project PATHE and Project STATUS is necessary. In the description of Project PATHE on the Western CAPT's Web site, there is a note from the program developers stating that the program is "not a curriculum or packaged product that is simply 'installed' in schools." However, the note also states that the program can be replicated with sufficient effort and local talent. The description of Project STATUS states that the only program information available is a research article describing the program (Gottfredson & Cook, 1986). We also found a more recent article cited in the program description on the program developer's Web site (Gottfredson, 1990).<sup>4</sup> Although a complete program kit would be preferable, these articles will help planners implement the program.

Two programs were recommended in 40% to 45% of Alabama's counties. Both programs address underage and adult drinking. Challenging College Alcohol Abuse (CCAA) was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking (CTIRHRD) was recommended in 40% of the counties. These results point to the need to address drinking problems in many of Alabama's counties. It is interesting to note that Challenging College Alcohol Abuse was also recommended for counties with relatively high rates of adult drug-related arrests because it was the only program we reviewed that was shown to reduce illegal drug-related crime among adults.

Ten programs appear on the list of recommended programs in 30% to 39% of Alabama's counties. Seven of these programs aim to decrease juvenile delinquency and problem behaviors. This result is not surprising, since four of the nineteen social indicators in the table relate to this concept (e.g. juvenile arrests for property crimes). The seven programs are: Functional Family Therapy (FFT), Positive Action (PA), Parents Who Care (PWC), Project SUCCESS (PSUCCESS), Early Risers (ER), the Adolescent Transitions Program (ATP), and Brief Strategic Family Therapy (BSFT). With the exception of Brief Strategic Family Therapy, which is designed only for African-American and Hispanic youth, these programs are appropriate for many different target populations.

Three of the ten programs recommended in 30% to 39% of the counties do not adhere to one theme. Brief Alcohol Screening and Intervention for College Students (BASICS) was recommended for 36% of the counties, although it may not be appropriate for

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<sup>4</sup> The Web address for the program developer's Web site is <http://www.colorado.edu/cspv/blueprints/promising/programs/BPP11.html>. The site also notes that while Project STATUS is no longer active, some of its components have been incorporated into other programs.

counties with no colleges or universities. Raising a Thinking Child (RTC), designed for low income mothers, was also recommended for 36% of the counties. Finally, Protecting You/Protecting Me (PYPM) was recommended 33% of the time. This program helps youth avoid riding with a drinking driver.

A variety of programs were recommended for 20% to 29% of the counties. The Nurse-Family Partnership (NFP), a program for low income and first time mothers, was recommended in 28% of the counties. Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress (CBC-CATS) was recommended in 25% of the counties. This program works with victims of crime and abuse, as well as people exposed to high amounts of crime in their neighborhood. We recommended this program for counties where adult violent crime arrests and arrests for family offenses were among the most problematic indicators. Although it is a form of therapy, it is considered to be substance abuse prevention rather than treatment and is likely needed in counties with high rates of violent and domestic crimes.

Two school-based programs appeared in Table 5 for 25% of the counties. The first program, Olweus Bullying Prevention (OBP) not only prevents bullying in school but also reduces incidences of anti-social behavior such as fighting, theft, and truancy. The second program, Project CARE (PC), successfully reduces delinquency through a school reorganization model. This program was developed by the same group of researchers that developed Project STATUS and Project PATHE and shares many similarities with these two programs. Similar to Project PATHE, there is a note on the Western CAPT's Web site stating that the program is not a packaged product but a research project that can be replicated with serious effort.

Two programs were recommended in 22% of the counties. The Leadership and Resiliency Program (LRP) and Reconnecting Youth Program (RYP) both focus on dropout prevention. Their frequent recommendation reflects the fact that dropping out is a widespread problem in many of Alabama's counties.

Another cluster of programs was recommended in 15% to 20% of Alabama's counties. Interestingly, all ten programs in this cluster were parenting skills programs. Five of these programs were recommended in 18% of the counties. The programs were: Any Baby Can Prenatal Education Program (ABC), Meld for African-American Young Mothers (MAYM), Meld for Growing Families (MGF), Meld for Young Dads (MYD), and Meld for Young Moms (MYM). These programs are intended primarily for teenage parents and were recommended for counties where adolescent pregnancies were among the three most problematic indicators. The Multidimensional Treatment for Foster Care Program (MTFC), a program with a prevention module for foster care parents, was recommended for areas with relatively high numbers of children in foster care, amounting to 16% of the counties in the State. The Parenting Skills Program (PSP) also has a module for foster care and adoptive parents and was recommended for the same counties. Healthy Families America (HFA), Helping the Noncomplicated Child (HNC), and Parents as Teachers (PAT) were recommended for counties with high rates of arrests for family offenses. These three parenting skills program aim to reduce

child neglect and abuse. They appear on the list of recommended programs in 15% of the counties.

The final ten programs were recommended in less than 15% of Alabama's counties. Athletes Training and Learning to Avoid Steroids (ATLAS) was recommended for approximately 13% of Alabama's counties, where juvenile alcohol-related arrests were problematic. Despite its title, the ATLAS curriculum covers the use of steroids, alcohol, and drugs and was shown to reduce illegal drinking and driving. Retailer-Directed Interventions (RDI) was the next most popular program in this cluster. We recommended this program for counties where tobacco sales outlets was one of the three most problematic indicators. This program was recommended in approximately 9% of the counties. Similarly, alcohol sales permits were among the three most problematic indicators in 7% of the State's counties. We recommended Communities Mobilizing for Change on Alcohol (CMCA) for these counties.

Six of the final ten programs were recommended in only 7% of the counties. The programs were: Al's Pals (AP), CICC's Effective Black Parenting Program (CICC), Family Effectiveness Training (FET), Incredible Years (IY), Promoting Alternative THinking Strategies (PATHS)<sup>5</sup>, Parenting Wisely (PW), and the Seattle Social Development Project (SSDP). These programs target problem behavior and were recommended for juvenile arrests for curfew, vandalism, and disorderly conduct. This indicator was among the most problematic in 7% of the counties, resulting in the small percentage of counties receiving recommendations for the corresponding programs.

### **Concordance among Recommended Programs within Counties**

A surprising result is the degree of concordance among program recommendations within each county. On many occasions, a program was recommended for two or more of the three problematic indicators within one county. This result stems from the fact that many programs matched more than one indicator. Some programs matched several conceptually related indicators, such as juvenile arrests for property crimes and juvenile arrests for curfew, vandalism, disorderly conduct. Conceptually related indicators had a tendency to appear together in one county, making it more likely that the same program would be recommended for more than one indicator.

There were only 16 counties where no program was recommended more than once. The counties are: Barbour, Chambers, Choctaw, Colbert, Escambia, Fayette, Henry, Jackson, Lawrence, Lowndes, Marion, Marshall, Monroe, Pike, Russell, and Saint Clair. Contrasting the results above, there were 14 counties where at least one recommended program was the same across all three indicators. The 14 counties were: Autauga, Baldwin, Bibb, Bullock, Calhoun, Clarke, Coffee, Greene, Hale, Macon, Madison, Montgomery, Perry, and Washington. Only a handful of programs accounted for these concordances, however. The Quantum Opportunities Program (QOP) was recommended in the greatest number of counties. This program was recommended for

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<sup>5</sup> Despite their similar names, Project PATHE (abbreviated PP in Table 5) and Promoting Alternative THinking Strategies (abbreviated PATHS in Table 5) are two distinct programs developed by different agencies.



three indicators in Bibb, Bullock, Clarke, Greene, Hale, Macon, Perry, and Washington counties. Positive Action (PA) was the next most frequently recommended program and was recommended for all three indicators in Autauga, Baldwin, Coffee, and Madison counties. Parents Who Care (PWC) followed the same pattern in Autauga, Coffee, and Madison, while Raising a Thinking Child (RTC) was recommended for all three indicators in Bibb, Perry, and Washington counties. The Nurturing Program (NP) was recommended for all three indicators in Calhoun and Montgomery counties, while Functional Family Therapy (FFT) was listed for all three indicators in Coffee and Madison counties. Finally, Project PATHE (PP) and Project Status (PSTATUS) were recommended for all three indicators only in Madison County.

In the remaining 37 counties, at least one program was recommended for two of the three indicators. A total of 18 programs accounted for these concordances. The Nurturing Program (NP) was the most common program in this category and was recommended twice in each of the following counties: Butler, Cherokee, Clay, Conecuh, Coosa, Covington, Cullman, Dallas, DeKalb, Geneva, Houston, Jefferson, Lamar, Limestone, Pickens, Randolph, Shelby, Talladega, Tuscaloosa, and Winston. The second most common program was the Quantum Opportunities Program (QOP). This program was recommended for two indicators in Butler, Cherokee, Clay, Conecuh, Dallas, DeKalb, Etowah, Geneva, Marengo, Pickens, Sumter, and Wilcox counties. Functional Family Therapy (FFT), Parents Who Care (PWC) and Positive Action (PA) were each recommended twice in ten counties: Dale, Elmore, Houston, Jefferson, Lauderdale, Lee, Mobile, Morgan, Tallapoosa, and Tuscaloosa. Project PATHE (PP) and Project STATUS (PSTATUS) were also recommended for two indicators in a number of counties. Specifically, the counties were Franklin, Houston, Jefferson, Lee, Mobile, Morgan, and Tuscaloosa. Raising a Thinking Child (RTC) follows in popularity. It received two recommendations in Butler, Conecuh, Marengo, Sumter, and Wilcox counties. The Community Trials Intervention to Reduce High-Risk Drinking (CTIRHRD) and Protecting You/Protecting Me (PYPM) were both recommended for two indicators in each of the same three counties: Elmore, Lauderdale, and Tallapoosa.

Several programs were recommended twice in each of two counties. Cleburne and Walker county each received two recommendations for Challenging College Alcohol Abuse (CCAA), while Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress (CBT-CATS) was recommended for two indicators in both Crenshaw and Winston counties. The Adolescent Transitions Program (ATP) and Early Risers (ER) were recommended for two of the three indicators in both Dale and Elmore counties.

Four programs appeared twice on the list of recommended programs in only one county. Brief Alcohol Screening and Intervention for College Students (BASICS) was recommended twice in Chilton County, while the Nurse-Family Partnership (NFP) program was recommended twice in Dallas County. Houston was the only county in which Olweus Bullying Prevention (OBP) and Project CARE (PC) were recommended for more than one indicator.

## CONCLUSIONS AND RECOMMENDATIONS

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### OVERVIEW

This report presents social indicator data gathered from a variety of sources. The advantages of social indicator data include their low cost and relative consistency in recording, as they are generally part of normal state and federal data archiving. We collected data on 42 indicators and examined their inter-temporal reliability. Subsequent tests on the temporally reliable indicators revealed that they could not be combined into validated indices. In light of this finding, we analyzed the indicators individually. We created maps showing the rates of each indicator, tables showing the ranks of each indicator, and a table with the programs appropriate for the three most prevalent indicators in each county. The sections below describe the results of these analyses in detail.

### RELIABILITY

We assessed the inter-temporal reliability of 32 of the 42 indicators collected. The remaining ten indicators did not have multiple years of data and hence, their inter-temporal reliability could not be determined. Of the 32 indicators tested, 22 met the minimum criteria for both Cronbach's standardized alpha and Heise's estimate of temporal reliability. The unreliable indicators are:

- Homicide rates
- Juvenile arrest rates for violent crimes
- Juvenile birth rates
- Event drop out rates
- Rates of dropouts prior to ninth grade
- Arrest rates among youth aged 10 to 14 for vandalism
- Arrest rates among youth aged 10 to 14 for alcohol-related offenses
- Juvenile suicide rates
- Alcohol-related traffic fatality rates
- Pregnant women in substance abuse treatment rates

We recommend the State not use the unreliable indicators for prevention planning, since the data do not appear to be stable over time. For this reason, we omitted unreliable indicators from subsequent analyses. In the future, the State may collect additional years of data in order to update the results from this study. Each time the State obtains new data, tests for inter-temporal reliability should be performed. It is possible that some indicators that were not stable during the time period for this study (1998-2000) will be stable in the future and vice versa.

## **INDICES BASED ON RISK FACTORS**

We tested whether the social indicators could be combined into valid indices of the risk factors in CSAP's model. Validity testing entailed constructing a Modified Multitrait-Multimethod Matrix. If validity were present, the matrix would show that indicators within the same risk factor correlate better with each other than indicators from different risk factors. This relationship was not observed in Alabama's data, leading us to conclude that indices of risk factors are not likely to be valid. In light of this finding, we recommend against creating indices of the CSAP risk factors, at least in Alabama.

## **INDICES BASED ON DOMAINS**

Risk and protective factors are typically classified into one of four domains: peer/individual, school, family, and community. We tested the feasibility of combining the social indicators into indices based on these domains. A Modified Multitrait-Multimethod Matrix was used to test the validity of the domains. If the domains were valid, indicators within each domain would correlate more highly with each other than with indicators in other domains. The matrix showed that this condition was not present in Alabama's data. We therefore conclude that indices based on domains are likely invalid and recommend against their creation and use in Alabama.

## **INDICES OF OVERALL RISK AND PROTECTION**

We created indices of overall risk using factor analysis. This method analyzes correlations in the data and combines highly correlated indicators into indices. After creating the indices, we attempted to validate them against data on risk from the Alabama Student Survey of Risk and Protective Factors. Our measures of protection, rates of youth organizations and church organizations, were also included in the validation process. We hypothesized that the risk indices would correlate positively with risk measured in the survey, while the protection variables would negatively correlate survey-based measures of risk. Regression analyses demonstrated that the indices had no significant relationship with the survey data. Thus, we could find no evidence that the indices are valid measures of overall risk and protection. Consequently, we recommend that planners examine each indicator individually rather than consider index scores.

## **UTILITY OF SOCIAL INDICATORS**

Although social indicators in Alabama cannot be combined into useful indices, they are still informative when examined individually. Social indicators provide data on the location of high risk populations in the State. Many of these populations, such as dropouts and prisoners, were not sampled by the student survey. Hence, the social indicators study is the only source of information on these populations. In addition, social indicators provide information on phenomena related to substance use and misuse, such as drinking and driving arrests, drug-related arrests, and arrests for juvenile delinquency. In light of these facts, our recommendation is that planners

examine social indicators on an individual basis, using the data in conjunction with their knowledge of the counties they serve. The next two sections of this report summarize the results of two analyses based on this idea.

## **GEOGRAPHIC DISTRIBUTION OF INDICATORS**

Mapping and ranking individual social indicators revealed that each indicator had a unique geographic pattern. Overall, regional differences within the State were apparent on many indicators. Most often, these differences were seen between the north and south, with the south tending to experience higher rates on many of the indicators. Counties containing large cities or counties surrounding large cities often differed from those in rural areas, although neither urban nor rural areas appeared more problematic overall. Several indicators seemed to divide along the racial make-up of the counties. Areas with more minorities tended to have higher rates on these indicators, although there were exceptions. Finally, the dry counties tended to experience lower rates on many indicators.

## **RECOMMENDED SCIENCE-BASED PREVENTION PROGRAMS**

We developed a set of program recommendations based on the three most problematic social indicators in each county. The problematic indicators and associated program recommendations appear in Table 5 of this report. As shown in the table, we recommended a variety of programs for each county, allowing planners to choose programs most suitable to the characteristics and needs of the local population. We recommend planners review Table 5 and select a subset of programs of interest. Planners can then research each program in their subset to determine the most appropriate programs for their area. To obtain information on programs of interest, planners can visit the Western CAPT's Web site (<http://www.unr.edu/westcapt/bestpractices/bestprac.htm>), review published articles, and contact program developers.

Each county in the State had a distinctive profile of problematic indicators and recommended programs. Nevertheless, some Statewide trends were apparent. The Nurturing Program and the Quantum Opportunities Program were recommended in 81% of Alabama's counties, since they were recommended for a variety of social indicators. State planners may wish to consider implementing these programs on a Statewide basis.

Project PATHE and Project STATUS were the second most frequently recommended programs. They appear on the list of recommended programs in 57% of the State's counties. These two school reorganization programs were frequently recommended because they reduce both delinquency and drop out rates. Their frequent recommendation may point to the need for programs that focus on school climate rather than on individual risk and protective factors. We recommend local planners give these programs, particularly Project PATHE, serious consideration. Planners could establish provider workgroups to work with the original program developers on implementing these programs in their area.

Challenging College Alcohol Abuse was third in popularity. It was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking was recommended in 40% of the counties and is also appropriate for the general population. Interestingly, both programs focus on changing the environment rather than on individual risk and protective factors. These programs highlight the need to reduce high risk drinking behavior in many of Alabama's counties, particularly through environmental and community-based strategies. Planners in counties with high rates of alcohol-related arrests should implement these or similar science-based programs if they have not done so already.

Programs focusing on individual risk and protective factors also have an important role in many counties. For example, seven programs that aim to decrease juvenile delinquency and problem behaviors were recommended in 30% to 39% of Alabama's counties. The programs were: Functional Family Therapy, Positive Action, Parents Who Care, Project SUCCESS, Early Risers, the Adolescent Transitions Program, and Brief Strategic Family Therapy. Planners seeking to reduce juvenile delinquency have a variety of programs from which to choose. We recommend planners carefully review each program to determine the best package for the local target population.

Three other programs focusing on individual risk and protective factors were recommended in approximately 35% of the counties. Brief Alcohol Screening and Intervention for College Students was recommended for 36% of the counties, although it may be appropriate only in areas with colleges or universities. Protecting You/Protecting Me helps youth avoid riding with a drinking driver and was recommended in 33% of the counties. These two programs illustrate the need to address drinking issues using individual-level strategies in approximately one-third of Alabama's counties.

The third program in this group was Raising a Thinking Child, which was recommended for 36% of the counties. This program was originally designed for low income, African-American mothers. Since poverty is a problem in many areas in Alabama, programs designed for low income families are particularly important. Raising a Thinking Child is also one of the few recommended programs that works with pre-schoolers. The program could be an important addition to the continuum of services across ages.

A variety of programs were recommended for less than 30% of Alabama's counties. While these programs may not be important for the State overall, they can play a critical role in meeting prevention need at the local level. We recommend that local planners review the specific program recommendations for their county in Table 5, thereby ensuring that these important programs are not overlooked.

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## **APPENDIX A**

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### **DATA INFORMATION**

**Table A-1. Prevention Needs Indicators**

Indicator	Definition	Indicator Domain
<b>Availability of Drugs</b>		
Alcohol Sales Outlets	The average yearly number of retail alcohol sales outlets on record in relationship to the total population. Reported as the number of alcohol sales outlets per 100,000 population	Community
Tobacco Sales Outlets	Reported as the average yearly number of retail tobacco sales outlets on record in relationship to the total population. Reported as the number of tobacco sales outlets per 100,000 population	Community
<b>Transitions and Mobility</b>		
New Home Construction	Reported as the number of new building permits issued for single and multi-family dwellings, per 100,000 population	Community
Households in Rental Properties	Reported as the percentage of households living in rental housing. Calculated as {renter occupied units (H3)/ total universe (H3) * 100,000}, data found in U.S. Census	Community
Net Migration	Reported as the number of new residents who moved into an area minus the number of residents moved out of the area, per 100,000 population. Does not include numbers of births and deaths within the area	Community
<b>Low Neighborhood Attachment and Community Disorganization</b>		
Population Voting in Election	Reported as the percentage of the adult population who vote in the November elections	Community
Prisoners in State and Local Correctional Systems	Reported as the duplicated number of new admissions to State and local prisons, by prisoner's county of residence, per 100,000 population	Community
<b>Extreme Economic and Social Deprivation</b>		
Unemployment	Reported as the percentage of the labor force not employed, reported on an average annual basis as a percentage of the total workforce	Community
Free and Reduced Lunch Program	Reported as the percentage of students in the public schools (K-12) whose applications have been approved for the Federal Free and Reduced Lunch Program	Community
Temporary Assistance for Needy Families	Reported as the rate of persons (all ages) in the TANF program, per 100,000 population	Community

Indicator	Definition	Indicator Domain
Food Stamp Recipients	Reported as the average number of monthly food stamp recipients per 100,000 population	Community
Adults without High School Diploma	Reported as the percentage of the total population age 25 and older who report the following level of educational attainment: Grades 9-12 no diploma, data found in the U.S. Census.	Community
Single Parent Family Households	Reported as the percentage of family households with spouse absent. Calculated as: {other family (male and female, no spouse present) / (married couple family + other family)*100,000.}, data found in the U.S. Census.	Community
<b>Family History of Substance Abuse</b>		
Adults in Alcohol and Other Drug Treatment Programs	Reported as the unduplicated number of adults (ages 18 and over) in State-supported treatment programs per 100,000 adults	Family
Juvenile Alcohol-Related Arrests	Reported as the juvenile (ages 10-17) arrest rate for alcohol violations (DUI, liquor law violations, drunkenness) per 100,000 juveniles	Family
Juvenile Drug-Related Arrests	Reported as the juvenile (ages 10-17) arrest rate for drug law violations (possession, sale, use, growing and manufacturing of illegal drugs) per 100,000 juveniles.	Family
Adult Alcohol-Related Arrests	Reported as the rate of adult (ages 18 and over) arrests for alcohol-related crimes (DUI, liquor law violations, drunkenness) per 100,000 adults	Family
Adult Drug-Related Arrests	Reported as the rate of adult (ages 18 and over) arrests for drug related crimes (illegal possession, sale, use, manufacturing and growing of illegal drugs) per 100,000 adults	Family
Adult Drunken Driving Arrests	Reported as the adult arrest rate (ages 18 and over) for drunken driving per 100,000 adults	Family
Alcohol-Related Traffic Fatalities	Reported as the percentage of all traffic fatalities related to alcohol	Family
Drug Use During Pregnancy	Reported as the number of pregnant women receiving ATOD treatment from State-supported treatment centers, per 100,000 live births	Family
<b>Violence</b>		
Juvenile Arrests for Violent Crimes	Reported as the juvenile (ages 10-17) arrest rate for "crimes against persons" (homicide, aggravated assault, robbery and rape) per 100,000 juveniles	Peer/Individual
Adult Arrests for Violent Crimes	Reported as the rate of adult arrests for violent crimes (criminal homicide, rape, robbery, and	Community

Indicator	Definition	Indicator Domain
	aggravated assault), per 100,000 adults	
Homicides	Reported as the number of homicide victims (murder and non negligent manslaughter) per 100,000 population. Includes deaths resulting from legal intervention	Community
<b>Non-Violent Crime</b>		
Juvenile Arrests for Curfew, Vandalism, and Disorderly Conduct	Reported as the juvenile (ages 10-17) arrest rate for curfew, vandalism and disorderly conduct per 100,000 juveniles	Peer/Individual
Juvenile Arrests for Property Crimes	Reported as the juvenile (10-17) arrest rate for "crimes against property" (burglary, larceny theft, arson, motor vehicle theft) per 100,000 juveniles (age 10-17)	Peer/Individual
Adult Arrests for Property Crimes	Reported as the adult (ages 18 and over) arrest rate for property crimes (burglary, larceny theft, arson, motor vehicle theft) per 100,000 adults	Community
<b>Suicide</b>		
Adolescent Suicide	Reported as the rate of completed suicides by juveniles (ages 10-17), per 100,000 juveniles	Peer/Individual
<b>Adolescent Sexual Behavior</b>		
Adolescent Pregnancies	Reported as the rate of juvenile pregnancies (ages 10-17) (live births, abortions and miscarriages) per 100,000 female adolescents	Peer/Individual
Birthrate Among Juveniles	Reported as the rate of live births among juveniles (ages 10-17), per 100,000 female adolescents	Peer/Individual
<b>Family Management Problems</b>		
Children Living Away From Parents	Reported as the rate of children (ages 0-17) living in home situations other than with one or both parents or guardians, per 1,000 children. Calculated as {householder or spouse + other relatives + nonrelatives + in-group quarters} / total universe}*100,000, data found in the U.S. Census.	Family
Children Living in Foster Care	Reported as the duplicated average daily rate of children (ages 0-17) in State-supervised, family-based foster care; regardless of parental rights termination or length of care, per 100,000 children	Family

Indicator	Definition	Indicator Domain
<b>Family Conflict</b>		
Divorce	Reported as the rate of divorce (dissolutions and annulments), per 100,000 population	Family
Domestic Violence Arrests	Reported as the rate of domestic violence arrests of partners (including spouses, former spouses, and lovers) per 100,000 adults (ages 18 and over). Does not include arrests for child abuse	Family
<b>Low Commitment to School</b>		
Event Dropouts	Reported as the percentage of students (9 <sup>th</sup> -12 <sup>th</sup> grade) who drop out of school in a single year without completing high school	School
Adolescents Without a High School Diploma (Status Dropouts)	Reported as the percentage of adolescents (ages 16-19), who have not completed high school and are not enrolled in school, regardless of when they dropped out. Calculated as {armed forces: not enrolled in school, not high school graduate + civilian: not enrolled in school, not high school grad} / total universe (ages 16-19)*100,000}, data found in the U.S. Census.	School
<b>Early Initiation of the Problem Behavior</b>		
Dropouts Prior to Ninth Grade	Reported as the number of students (grades 7-8) dropping out of school prior to ninth grade, per 100,000 students (grades 7-8)	Peer/Individual
Vandalism Arrests, Ages 10-14	Reported as the rate of adolescents (ages 10-14) arrested for vandalism (including residence, non residence, vehicle vandalized objects, police cars or other), per 100,000 adolescents	Peer/Individual
Alcohol-Related Arrests, Ages 10-14	Reported as the rate of adolescents (ages 10-14) arrested for alcohol (DUI, drunkenness and liquor law violations) violations per 100,000 adolescents	Peer/Individual
Personal and Property Crime Arrests, Ages 10-14	Reported as the rate of adolescents (ages 10-14) arrested for personal (criminal homicide, aggravated assault, robbery, rape) and property (burglary, larceny theft, arson motor vehicle theft) crimes, per 100,000 adolescents.	Peer/Individual
<b>Protective Factors</b>		
Church Organizations	The rate of church related non profit organizations per 100,000 people.	Community
Youth Organizations	The rate of non-profit organizations that serve youth per 100,000 people.	Community

**Table A-2. Sources of Information**

Construct	Collection Source	Collection Frequency	Time Period	Collection Method
<b>Availability of Drugs</b>				
Alcohol Sales Outlets	Alabama Alcohol Beverage Control Board	Yearly	As of July 13	Paper
Tobacco Sales Outlets	Alabama Alcohol Beverage Control Board	Yearly	Calendar Year	Paper
<b>Transitions and Mobility</b>				
New Home Construction	U.S.A. Counties, U.S. Bureau of the Census	Yearly	Calendar Year	Electronic
Households in Rental Properties	1990 Census of Population and Housing, Summary Tape File 1A, Table H3  U.S. Census Bureau, Census 2000 Summary File 1, Table H4.	Every 10 years	Year of Census <sup>1</sup>	Electronic
Net Migration	U.S. Bureau of the Census	Yearly	July 1 to June 30 of subsequent year	Electronic
<b>Low Neighborhood Attachment and Community Disorganization</b>				
Population Voting in Election	Elections Division, Office of the Secretary of State, State of Alabama	Every year in which there is a State or Federal election	November of Election Year	Electronic
Prisoners in State and Local Correctional Systems	Alabama Department of Corrections. Compiled by the Sentencing Institute, Auburn University	Yearly	Calendar Year	Paper

**Extreme Economic and Social Deprivation**

<sup>1</sup> Each household responding to the Census provides information on their status as of the day they fill out the Census form.



<b>Construct</b>	<b>Collection Source</b>	<b>Collection Frequency</b>	<b>Time Period</b>	<b>Collection Method</b>
Unemployment	Alabama Department of Industrial Relations	Yearly	Calendar Year	Paper
Free and Reduced Lunch Program	Alabama Department of Education	Yearly	School Year	Paper
Temporary Assistance for Needy Families (replaced AFDC)	Alabama Department of Human Resources	Yearly	State Fiscal Year	Paper
Food Stamp Recipients	Alabama Department of Human Resources	Yearly	State Fiscal Year	Paper
Adults Without High School Diploma	1990 Census of Population and Housing, Summary Tape File 3A, Table P57  U.S. Census Bureau, Census 2000 Summary File 3, Table P37	10 years	Year of Census <sup>2</sup>	Electronic
Single Parent Family Households	1990 Census of Population and Housing, Summary Tape File 1A, Table P18  U.S. Census Bureau, Census 2000 Summary File 1, Table P19	10 years	Year of Census <sup>3</sup>	Electronic
<b>Family History of Substance Abuse</b>				
Adults in Alcohol and Other Drug Treatment Programs	Alabama Department of Mental Health and Retardation	Yearly	State Fiscal Year	Electronic
Juvenile Alcohol-Related Arrests	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Juvenile Drug-Related Arrests	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper

<sup>2</sup> Each household responding to the Census provides information on the educational status of each adult living in the household on April 1 as of the day they fill out the Census form.

<sup>3</sup> Each household responding to the Census provides information on household composition as of April 1.

<b>Construct</b>	<b>Collection Source</b>	<b>Collection Frequency</b>	<b>Time Period</b>	<b>Collection Method</b>
Adult Alcohol-Related Arrests	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Adult Drug-Related Arrests	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Adult Drunken Driving Arrests	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Alcohol-Related Traffic Fatalities	Alabama Department of Public Safety	Yearly	Calendar Year	Paper
Drug Use During Pregnancy	Alabama Department of Mental Health and Mental Retardation (treatment data) and Alabama Department of Public Health (birth data)	Yearly	State Fiscal Year	Electronic
<b>Violence</b>				
Juvenile Arrests for Violent Crimes	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Adult Arrests for Violent Crimes	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Homicides	Alabama Department of Public Health	Yearly	Calendar Year	Paper
<b>Non-Violent Crime</b>				
Juvenile Arrests for Curfew, Vandalism and Disorderly Conduct	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Juvenile Arrests for Property Crimes	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Adult Arrests for Property Crimes	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
<b>Suicide</b>				
Adolescent Suicide	Alabama Department of Public Health	Yearly	Calendar Year	Paper

Construct	Collection Source	Collection Frequency	Time Period	Collection Method
<b>Adolescent Sexual Behavior</b>				
Adolescent Pregnancies	Alabama Department of Public Health, Center for Health Statistics	Yearly	Calendar Year	Paper
Birthrate Among Juveniles	Alabama Department of Public Health, Center for Health Statistics	Yearly	Calendar Year	Paper
<b>Family Management Problems</b>				
Children Living Away From Parents	1990 Census of Population and Housing, Summary Tape File 1A, Table P21  U.S. Census Bureau, Census 2000 Summary File 1, Table P29.	Every 10 years	Year of Census <sup>4</sup>	Electronic
Children Living in Foster Care	Alabama Department of Human Resources	Yearly	State Fiscal Year	Paper
<b>Family Conflict</b>				
Divorce	Alabama Department of Public Health, Center for Health Statistics	Yearly	Calendar Year	Paper
Domestic Violence Arrests	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
<b>Low Commitment to School</b>				
Event Dropouts	Alabama Department of Education	Yearly	School Year	Paper
Adolescents Without a High School Diploma (Status Dropouts)	1990 Census of Population and Housing, Summary Tape File 3A, Table P61	Every 10 years	Year of Census <sup>5</sup>	Electronic

<sup>4</sup> Each household responding to the Census provides information on their relationship to each person living in the household on April 1 as of the day they fill out the Census form.

<sup>5</sup> Each household responding to the Census provides information on the educational status of each adolescent in the household on April 1 as of the day they fill out the Census form.

Construct	Collection Source	Collection Frequency	Time Period	Collection Method
	U.S. Census Bureau, Census 2000 Summary File 3, Table P38.			
<b>Early Initiation of the Problem Behavior</b>				
Dropouts Prior to Ninth Grade	Alabama Department of Education	Yearly	School Year	Paper
Vandalism Arrests, Ages 10-14	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Alcohol-Related Arrests, Ages 10-14	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
Personal and Property Crime Arrests, Ages 10-14	Alabama Criminal Justice Information System	Yearly	Calendar Year	Paper
<b>Protective Factors</b>				
Church Organizations	Internal Revenue Service, Business Master File, excerpt on tax exempt organizations. File for current year is available at <a href="http://www.irs.gov/pub/irs-soi/00_al.exe">http://www.irs.gov/pub/irs-soi/00_al.exe</a> .  File for year of data used was downloaded from <a href="http://www.irs.gov/taxstats/ex_imf.html">http://www.irs.gov/taxstats/ex_imf.html</a> .	Yearly	Calendar Year	Electronic
Youth Organizations	Internal Revenue Service, Business Master File, excerpt on tax exempt organizations. File for current year is available at <a href="http://www.irs.gov/pub/irs-soi/00_al.exe">http://www.irs.gov/pub/irs-soi/00_al.exe</a> .	Yearly	Calendar Year	Electronic

Construct	Collection Source	Collection Frequency	Time Period	Collection Method
	File for year of data used was downloaded from <a href="http://www.irs.gov/tax_stats/ex_imf.html">http://www.irs.gov/tax_stats/ex_imf.html</a> .			

**Table A-3. Years Available for Prevention Needs Indicators**

Indicator	Years Available
<b>Availability of Drugs</b>	
Alcohol Sales Outlets	2000-2001
Tobacco Sales Outlets	2000-2001
<b>Transitions and Mobility</b>	
New Home Construction	1995-1997
Households in Rental Properties	1990 & 2000
Net Migration	1997-1999
<b>Low Neighborhood Attachment and Community Disorganization</b>	
Population Voting in Election	1996, 1998, 2000
Prisoners in State and Local Correctional Systems	1996-2000
<b>Extreme Economic and Social Deprivation</b>	
Unemployment	1996-2000
Free and Reduced Lunch Program	1998-2001
Temporary Assistance for Needy Families	1997-2001
Food Stamp Recipients	1997-2000
Adults without High School Diploma	1990 & 2000
Single Parent Family Households	1990 & 2000
<b>Family History of Substance Abuse</b>	
Adults in Alcohol and Other Drug Treatment Programs	1996-2000
Juvenile Alcohol- Related Arrests	1996-2000
Juvenile Drug-Related Arrests	1996-2000
Adult Alcohol-Related Arrests	1996-2000
Adult Drug- Related Arrests	1996-2000
Adult Drunken Driving Arrests	1996-2000
Alcohol- Related Traffic Fatalities	1996-2000
Drug Use During Pregnancy	1997-2000
<b>Violence</b>	
Juvenile Arrests for Violent Crimes	1996-2000
Adult Arrests for Violent Crimes	1996-2000
Homicides	1996-2000
<b>Non-Violent Crime</b>	
Juvenile Arrests for Curfew, Vandalism, and Disorderly Conduct	1996-2000
Juvenile Arrests for Property Crimes	1996-2000
Adult Arrests for Property Crimes	1996-2000

Indicator	Years Available
<b>Suicide</b>	
Adolescent Suicide	1996-2000
<b>Adolescent Sexual Behavior</b>	
Adolescent Pregnancies	1996-1999
Birthrate Among Juveniles	1996-2000
<b>Family Management Problems</b>	
Children Living Away From Parents	1990 & 2000
Children Living in Foster Care	1998-2000
<b>Family Conflict</b>	
Divorce	1996-2000
Domestic Violence Arrests	1996-2000
<b>Low Commitment to School</b>	
Event Dropouts	1997-2000
Status Dropouts	1990 & 2000
<b>Early Initiation of Problem Behavior</b>	
Dropouts Prior to Ninth Grade	1997-2000
Vandalism Arrests, Ages 10-14	1996-2000
Alcohol-Related Arrests, Ages 10-14	1996-2000
Personal and Property Crime Arrests, Ages 10-14	1996-2000
<b>Protective Factors</b>	
Church Organizations	2000 only
Youth Organizations	2000 only

## **APPENDIX B**

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### **SOCIAL INDICATORS AND SCIENCE- BASED PROGRAMS**



**Table B-1. Social Indicators and Matching Science-Based Programs**

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
Adolescent pregnancies	Adolescent parents  Pregnant adolescents	Unprotected sex during adolescence	Any Baby Can Prenatal Education Program  Meld for African-American Young Mothers  Meld for Growing Families  Meld for Young Dads  Meld for Young Moms  Nurse-Family Partnership (NFP)  Nurturing Program	Nurse-Family Partnership (NFP)  Quantum Opportunities Program
Adolescents without high school diplomas	Juvenile dropouts	Dropping out of school	Project STATUS  Reconnecting Youth (RY)	Leadership and Resiliency Program (LRP)  Project PATHE  Project STATUS  Quantum Opportunities Program

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
Adult alcohol-related arrests	Adults arrested for alcohol-related crimes	Violation of alcohol laws (adults)	Brief Alcohol Screening and Intervention for College Students (BASICS)	<p>Brief Alcohol Screening and Intervention for College Students (BASICS)</p> <p>Challenging College Alcohol Abuse</p> <p>Community Trials Intervention to Reduce High-Risk Drinking (RHRD)</p> <p>Protecting You/Protecting Me</p>
Adult drug-related arrests	Adults arrested for drug-related crimes	Violation of drug laws (adults)	None	Challenging College Alcohol Abuse
Adult property arrests	Adults arrested for property crimes	Property crime among adults	None	None
Adult violent crime arrests	Adults arrested for violent crimes	Violent crime among adults	<p>Brief Alcohol Screening and Intervention for College Students (BASICS)</p> <p>Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress (CBT-CATS)</p>	None
Adults in substance abuse treatment	<p>Adults in treatment</p> <p>Children and families of adults in treatment</p>	Alcohol and drug misuse	Nurturing Program	None
Adults without high school diplomas	Adult dropouts	Dropping out of school	None	None

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
Alcohol sales permits	Alcohol vendors	Selling alcohol	Challenging College Alcohol Abuse  Communities Mobilizing for Change on Alcohol (CMCA)  Community Trials Intervention to Reduce High-Risk Drinking (RHRD)	None
Arrests for family offenses	Adults arrested for family offenses  Families of adults arrested for family offenses	Domestic violence  Non-support, neglect, or desertion of family	Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress (CBT-CATS)  Helping the Non-Compliant Child: Parenting and Family Skills Program  Nurturing Program	Healthy Families America  Parents as Teachers
Children in foster care	Children in foster care  Foster parents	Living with foster parents	Multidimensional Treatment Foster Care Program  Nurturing Program  Parenting Skills Program (Guerney)	None
Divorce	Children of divorced parents  Divorced parents	Divorce	None	None

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
Food stamp recipients	Low income families  People who receive food stamps	Receiving food stamps	Quantum Opportunities Program  Raising a Thinking Child: I Can Problem Solve Program for Families	None
Free and reduced price lunch	Children from low income families	Receiving free or reduced price lunches	Quantum Opportunities Program  Raising a Thinking Child: I Can Problem Solve Program for Families	None
Juvenile alcohol-related arrests	Juvenile delinquents charged with alcohol-related offenses	Juvenile delinquency  Violation of alcohol laws (juveniles)	Adolescent Transitions Program  Early Risers <i>Skills for Success</i>  Functional Family Therapy Program  Parents Who Care: Drug Prevention for Parents of Adolescents	Athletes Training and Learning to Avoid Steroids (ATLAS)  Community Trials Intervention to Reduce High-Risk Drinking (RHRD)  Positive Action  Project SUCCESS  Protecting You/Protecting Me

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
Juvenile arrests for curfew, vandalism, and disorderly conduct	Juvenile delinquents charged with curfew violations, vandalism, or disorderly conduct	Juvenile delinquency	Adolescent Transitions Program Early Risers <i>Skills for Success</i> Functional Family Therapy Program Nurturing Program Parents Who Care: Drug Prevention for Parents of Adolescents Project PATHE	Al's Pals: Kids Making Healthy Choices Brief Strategic Family Therapy (BSFT) CICC's Effective Black Parenting Program Family Effectiveness Training (FET) Functional Family Therapy Program Incredible Years Olweus Bullying Prevention Parenting Wisely Positive Action (PA) Project CARE Project PATHE Project STATUS Promoting Alternative Thinking Strategies (PATHS) Quantum Opportunities Program Seattle Social Development Project

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
Juvenile drug-related arrests	Juvenile delinquents charged with drug-related offenses	Juvenile delinquency Violation of drug laws (juveniles)	Adolescent Transitions Program Early Risers <i>Skills for Success</i> Functional Family Therapy Program Parents Who Care: Drug Prevention for Parents of Adolescents	Brief Strategic Family Therapy (BSFT) Positive Action (PA) Project PATHE Project STATUS
Juvenile property crime arrests	Juvenile delinquents charged with property crimes	Juvenile delinquency	Functional Family Therapy Program Nurturing Program Parents Who Care: Drug Prevention for Parents of Adolescents Project PATHE	Functional Family Therapy Program Olweus Bullying Prevention Positive Action (PA) Project CARE Project PATHE Project STATUS Quantum Opportunities Program
Migration into the county	People who just moved to a new county	Moving into and out of a county	None	None
New home construction	People living in new homes	Changing homes	None	None
Renting households	People living in rental housing	Lack of a permanent home Renting	None	None
Single parent households	Children living in single parent households Single parents	Being a parent and not living with a spouse	None	None

Indicator	Related Target Population	Behaviors Reflected	Programs Designed for the Target Population	Programs Addressing the Indicator / Behavior
State prisoners	State prisoners	Crime among adults	Nurturing Program	None
TANF participants	Families who participate in TANF  Low income families	Participation in TANF	Nurse-Family Partnership (NFP)  Quantum Opportunities Program  Raising a Thinking Child: I Can Problem Solve Program for Families	None
Tobacco sales permits	Tobacco vendors	Selling tobacco	Retailer-Directed Interventions	None
Unemployment	People who are unemployed	Being jobless	None	None
Voting	People who vote	Participation in politics	None	None

## **APPENDIX C**

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### **RANKING TABLES OF INDICATORS**



**Table C-1. County Rankings on Availability of Substances:  
Alcohol Sales Permits and Tobacco Sales Permits**

COUNTY	Alcohol Sales Permits 2000	Tobacco Sales Permits 2000
Autauga	16	17
Baldwin	42	39
Barbour	33	28
Bibb	1	9
Blount	1	1
Bullock	45	60
Butler	34	56
Calhoun	19	24
Chambers	23	42
Cherokee	1	14
Chilton	6	23
Choctaw	41	66
Clarke	1	36
Clay	1	22
Cleburne	5	53
Coffee	8	3
Colbert	11	40
Conecuh	47	63
Coosa	22	41
Covington	32	58
Crenshaw	35	62
Cullman	1	19
Dale	17	13
Dallas	36	26
DeKalb	1	5
Elmore	27	32
Escambia	28	30
Etowah	13	35
Fayette	1	52
Franklin	1	10
Geneva	1	27
Greene	48	64
Hale	24	48
Henry	31	33
Houston	40	47
Jackson	9	50
Jefferson	26	4
Lamar	1	57
Lauderdale	7	12
Lawrence	1	31
Lee	15	11
Limestone	2	6
Lowndes	49	51
Macon	43	61
Madison	25	8
Marengo	38	54

COUNTY	Alcohol Sales Permits 2000	Tobacco Sales Permits 2000
Marion	1	46
Marshall	3	21
Mobile	30	15
Monroe	1	44
Montgomery	21	7
Morgan	10	18
Perry	44	59
Pickens	1	43
Pike	37	45
Randolph	1	37
Russell	29	49
Saint Clair	12	16
Shelby	14	2
Sumter	46	67
Talladega	20	29
Tallapoosa	39	55
Tuscaloosa	18	25
Walker	4	20
Washington	1	34
Wilcox	50	65
Winston	1	38

**Table C-2. County Rankings on Drug and Alcohol Use in the Community:  
Adult Alcohol-Related Arrests, Adult Drug-Related Arrests,  
Adult Drunk Driving Arrests, and Adults in Substance Treatment**

COUNTY	Adult Alcohol- Related Arrests 1998-2000	Adult Drug- Related Arrests 1998-2000	Adult Drunk Driving Arrests 1998-2000	Adults in Substance Treatment 1998-2000
Autauga	48	58	26	37
Baldwin	42	35	34	13
Barbour	39	65	40	19
Bibb	3	1	3	16
Blount	26	12	23	5
Bullock	12	7	12	6
Butler	15	16	19	17
Calhoun	56	57	55	59
Chambers	53	62	64	50
Cherokee	11	8	7	51
Chilton	43	31	42	48
Choctaw	1	5	1	3
Clarke	23	21	27	2
Clay	17	13	17	18
Cleburne	52	50	66	14
Coffee	33	17	45	44
Colbert	66	32	62	11
Conecuh	49	29	65	35
Coosa	38	54	53	9
Covington	30	19	37	64
Crenshaw	40	41	41	42
Cullman	54	24	33	25
Dale	45	61	59	24
Dallas	10	38	9	66
DeKalb	25	6	14	65
Elmore	50	43	57	39
Escambia	29	14	31	47
Etowah	55	60	54	34
Fayette	24	51	15	57
Franklin	62	33	49	26
Geneva	34	27	52	38
Greene	6	9	8	45
Hale	8	4	10	21
Henry	31	66	39	29
Houston	57	67	60	55
Jackson	65	39	47	56
Jefferson	9	22	6	67
Lamar	5	2	5	54
Lauderdale	51	23	46	12
Lawrence	32	30	21	22
Lee	44	36	58	36
Limestone	64	37	67	4
Lowndes	46	48	63	46
Macon	14	25	24	8

<b>COUNTY</b>	<b>Adult Alcohol- Related Arrests 1998-2000</b>	<b>Adult Drug- Related Arrests 1998-2000</b>	<b>Adult Drunk Driving Arrests 1998-2000</b>	<b>Adults in Substance Treatment 1998-2000</b>
<b>Madison</b>	19	56	25	23
<b>Marengo</b>	21	20	35	60
<b>Marion</b>	59	44	32	49
<b>Marshall</b>	67	59	56	58
<b>Mobile</b>	16	40	13	32
<b>Monroe</b>	35	46	50	10
<b>Montgomery</b>	4	28	4	63
<b>Morgan</b>	63	49	48	33
<b>Perry</b>	2	3	2	40
<b>Pickens</b>	18	42	18	52
<b>Pike</b>	28	64	29	27
<b>Randolph</b>	58	45	38	7
<b>Russell</b>	41	63	51	20
<b>Saint Clair</b>	27	10	36	28
<b>Shelby</b>	22	18	28	30
<b>Sumter</b>	13	11	22	31
<b>Talladega</b>	47	47	43	53
<b>Tallapoosa</b>	61	55	61	15
<b>Tuscaloosa</b>	37	53	44	61
<b>Walker</b>	60	52	30	62
<b>Washington</b>	20	15	20	1
<b>Wilcox</b>	7	26	11	43
<b>Winston</b>	36	34	16	41

**Table C-3. County Rankings on Drug and Alcohol Use  
in the Community: Juvenile Alcohol-Related Arrests,  
Juvenile Drug-Related Arrests**

<b>COUNTY</b>	<b>Juvenile Alcohol- Related Arrests 1998-2000</b>	<b>Juvenile Drug- Related Arrests 1998-2000</b>
Autauga	60	55
Baldwin	58	53
Barbour	52	61
Bibb	1	1
Blount	32	15
Bullock	1	17
Butler	26	24
Calhoun	35	40
Chambers	48	60
Cherokee	12	7
Chilton	21	19
Choctaw	1	1
Clarke	30	29
Clay	9	14
Cleburne	13	4
Coffee	45	41
Colbert	40	38
Conecuh	33	25
Coosa	18	35
Covington	47	22
Crenshaw	41	23
Cullman	37	31
Dale	55	56
Dallas	8	39
DeKalb	20	10
Elmore	50	50
Escambia	29	32
Etowah	19	13
Fayette	57	33
Franklin	39	44
Geneva	34	12
Greene	1	6
Hale	3	1
Henry	24	45
Houston	54	59
Jackson	6	2
Jefferson	36	49
Lamar	1	1
Lauderdale	56	34
Lawrence	1	18
Lee	42	46
Limestone	44	37
Lowndes	4	1
Macon	15	36
Madison	46	58

<b>COUNTY</b>	<b>Juvenile Alcohol- Related Arrests 1998-2000</b>	<b>Juvenile Drug- Related Arrests 1998-2000</b>
<b>Marengo</b>	11	8
<b>Marion</b>	49	21
<b>Marshall</b>	51	43
<b>Mobile</b>	22	54
<b>Monroe</b>	31	5
<b>Montgomery</b>	2	48
<b>Morgan</b>	53	52
<b>Perry</b>	5	1
<b>Pickens</b>	25	11
<b>Pike</b>	14	47
<b>Randolph</b>	43	16
<b>Russell</b>	16	42
<b>Saint Clair</b>	28	26
<b>Shelby</b>	10	9
<b>Sumter</b>	7	27
<b>Talladega</b>	23	30
<b>Tallapoosa</b>	59	51
<b>Tuscaloosa</b>	38	57
<b>Walker</b>	27	20
<b>Washington</b>	17	3
<b>Wilcox</b>	1	28
<b>Winston</b>	1	1

**Table C-4. County Rankings on Education: Adults Without a High School Diploma, and Adolescents Without a High School Diploma**

<b>COUNTY</b>	<b>Adults Without a High School Diploma 2000</b>	<b>Adolescents Without a High School Diploma 2000</b>
Autauga	8	8
Baldwin	3	26
Barbour	53	60
Bibb	58	16
Blount	24	58
Bullock	65	48
Butler	36	22
Calhoun	17	33
Chambers	55	35
Cherokee	57	62
Chilton	42	36
Choctaw	50	7
Clarke	23	12
Clay	44	38
Cleburne	60	61
Coffee	19	45
Colbert	18	20
Conecuh	37	32
Coosa	45	21
Covington	34	39
Crenshaw	66	9
Cullman	25	44
Dale	9	3
Dallas	26	30
DeKalb	56	66
Elmore	10	28
Escambia	33	59
Etowah	16	57
Fayette	43	50
Franklin	63	64
Geneva	46	51
Greene	51	65
Hale	48	53
Henry	40	47
Houston	12	17
Jackson	39	27
Jefferson	5	15
Lamar	49	4
Lauderdale	13	14
Lawrence	47	63
Lee	4	1
Limestone	15	37
Lowndes	54	43
Macon	28	6
Madison	2	18

<b>COUNTY</b>	<b>Adults Without a High School Diploma 2000</b>	<b>Adolescents Without a High School Diploma 2000</b>
<b>Marengo</b>	46	21
<b>Marion</b>	56	59
<b>Marshall</b>	67	31
<b>Mobile</b>	24	11
<b>Monroe</b>	52	35
<b>Montgomery</b>	29	6
<b>Morgan</b>	55	14
<b>Perry</b>	10	62
<b>Pickens</b>	19	30
<b>Pike</b>	13	32
<b>Randolph</b>	49	64
<b>Russell</b>	34	41
<b>Saint Clair</b>	42	22
<b>Shelby</b>	2	1
<b>Sumter</b>	23	52
<b>Talladega</b>	31	29
<b>Tallapoosa</b>	41	27
<b>Tuscaloosa</b>	5	7
<b>Walker</b>	40	38
<b>Washington</b>	11	20
<b>Wilcox</b>	54	67
<b>Winston</b>	25	61



**Table C-5. County Rankings on Family Characteristics: Adolescent Pregnancies, Children in Foster Care, and Children Living Away from Parents**

COUNTY	Adolescent Pregnancies 1997-1999	Children in Foster Care 1998-2000	Children Living Away from Parents 2000
Autauga	24	21	22
Baldwin	10	12	11
Barbour	62	1	55
Bibb	22	53	37
Blount	4	13	15
Bullock	65	46	59
Butler	36	59	52
Calhoun	33	64	41
Chambers	56	38	60
Cherokee	50	43	30
Chilton	29	32	27
Choctaw	20	37	51
Clarke	46	9	46
Clay	28	58	19
Cleburne	30	27	13
Coffee	44	39	18
Colbert	49	4	31
Conecuh	9	66	42
Coosa	57	16	56
Covington	16	2	25
Crenshaw	39	47	34
Cullman	27	60	9
Dale	34	15	6
Dallas	67	57	61
DeKalb	26	17	12
Elmore	41	5	24
Escambia	25	33	48
Etowah	37	61	38
Fayette	31	25	21
Franklin	5	34	14
Geneva	42	40	29
Greene	63	65	65
Hale	47	20	53
Henry	11	44	45
Houston	13	63	17
Jackson	12	29	28
Jefferson	45	41	40
Lamar	1	48	4
Lauderdale	3	42	2
Lawrence	6	31	16
Lee	43	24	23
Limestone	21	7	5
Lowndes	59	36	66
Macon	64	62	67
Madison	14	50	8

<b>COUNTY</b>	<b>Adolescent Pregnancies 1997-1999</b>	<b>Children in Foster Care 1998-2000</b>	<b>Children Living Away from Parents 2000</b>
<b>Marengo</b>	35	18	43
<b>Marion</b>	7	3	10
<b>Marshall</b>	53	14	26
<b>Mobile</b>	51	54	47
<b>Monroe</b>	19	10	36
<b>Montgomery</b>	58	35	49
<b>Morgan</b>	15	51	7
<b>Perry</b>	61	56	63
<b>Pickens</b>	60	28	58
<b>Pike</b>	66	19	50
<b>Randolph</b>	52	67	39
<b>Russell</b>	54	52	54
<b>Saint Clair</b>	8	11	20
<b>Shelby</b>	2	8	1
<b>Sumter</b>	38	49	64
<b>Talladega</b>	48	55	57
<b>Tallapoosa</b>	32	23	44
<b>Tuscaloosa</b>	40	30	32
<b>Walker</b>	23	45	35
<b>Washington</b>	17	22	33
<b>Wilcox</b>	55	26	62
<b>Winston</b>	18	6	3

**Table C-6. County Rankings on Family Characteristics:  
Divorce and Single-Parent Households**

<b>COUNTY</b>	<b>Divorce 1998-2000</b>	<b>Single-Parent Households 2000</b>
<b>Autauga</b>	43	24
<b>Baldwin</b>	36	14
<b>Barbour</b>	23	57
<b>Bibb</b>	33	26
<b>Blount</b>	1	2
<b>Bullock</b>	10	67
<b>Butler</b>	35	53
<b>Calhoun</b>	60	36
<b>Chambers</b>	49	50
<b>Cherokee</b>	51	6
<b>Chilton</b>	56	11
<b>Choctaw</b>	26	47
<b>Clarke</b>	22	38
<b>Clay</b>	52	20
<b>Cleburne</b>	55	3
<b>Coffee</b>	27	32
<b>Colbert</b>	54	28
<b>Conecuh</b>	20	52
<b>Coosa</b>	6	37
<b>Covington</b>	8	30
<b>Crenshaw</b>	13	41
<b>Cullman</b>	58	4
<b>Dale</b>	67	35
<b>Dallas</b>	24	63
<b>DeKalb</b>	21	10
<b>Elmore</b>	47	16
<b>Escambia</b>	29	46
<b>Etowah</b>	61	33
<b>Fayette</b>	44	18
<b>Franklin</b>	31	13
<b>Geneva</b>	17	27
<b>Greene</b>	3	65
<b>Hale</b>	12	59
<b>Henry</b>	16	39
<b>Houston</b>	66	40
<b>Jackson</b>	30	15
<b>Jefferson</b>	39	48
<b>Lamar</b>	34	21
<b>Lauderdale</b>	42	19
<b>Lawrence</b>	41	12
<b>Lee</b>	19	34
<b>Limestone</b>	7	7
<b>Lowndes</b>	15	60
<b>Macon</b>	5	66
<b>Madison</b>	40	29
<b>Marengo</b>	32	54

COUNTY	Divorce 1998-2000	Single-Parent Households 2000
Marion	63	8
Marshall	65	22
Mobile	45	49
Monroe	25	43
Montgomery	38	56
Morgan	57	23
Perry	9	64
Pickens	4	51
Pike	28	55
Randolph	50	31
Russell	64	58
Saint Clair	48	5
Shelby	18	1
Sumter	11	62
Talladega	59	45
Tallapoosa	46	44
Tuscaloosa	14	42
Walker	53	25
Washington	37	17
Wilcox	2	61
Winston	62	9

**Table C-7. County Rankings on Socio-Economic Conditions:  
Food Stamp Recipients, Free/Reduced Price Lunches, and  
Migration into the County**

<b>COUNTY</b>	<b>Food Stamp Recipients 1998-2000</b>	<b>Free/Reduced Price Lunches 1998-2000</b>	<b>Migration into the County 1997-1999</b>
Autauga	11	8	60
Baldwin	2	3	66
Barbour	55	52	15
Bibb	28	43	61
Blount	7	6	65
Bullock	59	63	18
Butler	51	55	14
Calhoun	32	32	22
Chambers	35	46	17
Cherokee	29	26	56
Chilton	30	19	58
Choctaw	50	58	4
Clarke	58	44	35
Clay	8	38	55
Cleburne	15	15	64
Coffee	20	21	21
Colbert	22	29	19
Conecuh	60	62	11
Coosa	19	45	43
Covington	45	27	27
Crenshaw	42	48	31
Cullman	4	12	54
Dale	44	34	7
Dallas	61	61	9
DeKalb	12	14	52
Elmore	10	16	63
Escambia	40	41	30
Etowah	27	30	38
Fayette	39	7	40
Franklin	31	28	37
Geneva	38	36	44
Greene	65	65	2
Hale	54	60	48
Henry	46	37	49
Houston	37	35	36
Jackson	18	23	46
Jefferson	21	20	13
Lamar	36	22	45
Lauderdale	13	9	29
Lawrence	25	33	50
Lee	6	17	59
Limestone	17	4	57
Lowndes	63	66	28
Macon	64	59	6

COUNTY	Food Stamp Recipients 1998-2000	Free/Reduced Price Lunches 1998-2000	Migration into the County 1997-1999
Madison	5	2	51
Marengo	57	56	12
Marion	23	13	16
Marshall	24	11	33
Mobile	47	47	20
Monroe	56	49	5
Montgomery	49	51	8
Morgan	3	5	42
Perry	66	64	23
Pickens	53	54	26
Pike	52	53	25
Randolph	34	39	24
Russell	41	50	3
Saint Clair	16	10	62
Shelby	1	1	67
Sumter	62	57	1
Talladega	43	42	39
Tallapoosa	33	31	32
Tuscaloosa	26	24	34
Walker	9	25	47
Washington	48	40	41
Wilcox	67	67	10
Winston	14	18	53

**Table C-8. County Rankings on Socio-Economic Characteristics:  
New Home Construction, Renting Households, Temporary  
Assistance for Needy Families (TANF Recipients), and Unemployment**

<b>COUNTY</b>	<b>New Home Construction 1995-1997</b>	<b>Renting Households 2000</b>	<b>Temporary Assistance for Needy Families (TANF) 1998-2000</b>	<b>Unemployment 1998-2000</b>
<b>Autauga</b>	62	16	31	10
<b>Baldwin</b>	66	24	2	5
<b>Barbour</b>	40	51	52	25
<b>Bibb</b>	17	21	28	43
<b>Blount</b>	30	5	17	3
<b>Bullock</b>	6	46	61	59
<b>Butler</b>	32	41	46	65
<b>Calhoun</b>	42	53	37	27
<b>Chambers</b>	28	43	40	21
<b>Cherokee</b>	34	10	27	20
<b>Chilton</b>	20	9	29	18
<b>Choctaw</b>	7	2	47	56
<b>Clarke</b>	35	12	60	53
<b>Clay</b>	11	35	25	32
<b>Cleburne</b>	15	18	10	14
<b>Coffee</b>	57	55	32	26
<b>Colbert</b>	52	42	3	44
<b>Conecuh</b>	8	13	65	52
<b>Coosa</b>	5	3	35	28
<b>Covington</b>	23	32	36	50
<b>Crenshaw</b>	27	38	38	54
<b>Cullman</b>	41	29	4	13
<b>Dale</b>	29	63	41	22
<b>Dallas</b>	16	62	62	60
<b>DeKalb</b>	21	28	12	15
<b>Elmore</b>	63	11	16	7
<b>Escambia</b>	39	36	21	34
<b>Etowah</b>	46	47	9	38
<b>Fayette</b>	18	33	39	51
<b>Franklin</b>	44	48	23	45
<b>Geneva</b>	19	17	20	42
<b>Greene</b>	14	44	56	64
<b>Hale</b>	2	20	51	48
<b>Henry</b>	36	15	48	29
<b>Houston</b>	54	57	26	16
<b>Jackson</b>	33	30	5	40
<b>Jefferson</b>	60	61	44	8
<b>Lamar</b>	22	37	14	55
<b>Lauderdale</b>	43	50	7	39
<b>Lawrence</b>	10	8	18	31
<b>Lee</b>	61	67	22	9
<b>Limestone</b>	37	34	24	11
<b>Lowndes</b>	9	6	59	63

<b>COUNTY</b>	<b>New Home Construction 1995-1997</b>	<b>Renting Households 2000</b>	<b>Temporary Assistance for Needy Families (TANF) 1998-2000</b>	<b>Unemployment 1998-2000</b>
<b>Macon</b>	50	59	63	47
<b>Madison</b>	51	56	30	4
<b>Marengo</b>	38	26	58	36
<b>Marion</b>	26	31	6	49
<b>Marshall</b>	47	45	19	37
<b>Mobile</b>	58	58	50	23
<b>Monroe</b>	12	19	45	61
<b>Montgomery</b>	59	64	57	12
<b>Morgan</b>	55	52	8	17
<b>Perry</b>	48	49	64	58
<b>Pickens</b>	25	25	53	57
<b>Pike</b>	49	60	49	35
<b>Randolph</b>	1	27	42	30
<b>Russell</b>	56	66	54	19
<b>Saint Clair</b>	53	4	15	6
<b>Shelby</b>	65	14	1	1
<b>Sumter</b>	13	54	66	62
<b>Talladega</b>	24	39	43	33
<b>Tallapoosa</b>	45	40	34	24
<b>Tuscaloosa</b>	64	65	33	2
<b>Walker</b>	31	23	11	41
<b>Washington</b>	4	1	55	66
<b>Wilcox</b>	1	7	67	67
<b>Winston</b>	3	22	13	46



**Table C-9. County Rankings on Adult Crime: Arrests for Family Offenses, Prisoners, Adult Property Crime Arrests, Adult Violent Crime Arrests**

COUNTY	Arrests for Family Offenses 1998-2000	Prisoners 1998-2000	Adult Property Crime Arrests 1998-2000	Adult Violent Crime Arrests 1998-2000
Autauga	57	56	65	48
Baldwin	48	38	39	31
Barbour	26	54	14	25
Bibb	1	2	1	1
Blount	24	23	8	5
Bullock	1	62	21	23
Butler	34	43	29	55
Calhoun	18	29	66	56
Chambers	49	59	57	57
Cherokee	9	31	7	2
Chilton	21	27	32	47
Choctaw	1	30	5	21
Clarke	7	22	26	30
Clay	15	53	12	9
Cleburne	10	8	16	11
Coffee	38	33	60	33
Colbert	19	26	19	19
Conecuh	35	66	9	32
Coosa	42	55	52	54
Covington	23	58	30	36
Crenshaw	58	21	53	63
Cullman	60	15	37	18
Dale	30	9	33	46
Dallas	47	63	27	58
DeKalb	8	20	10	4
Elmore	37	35	45	38
Escambia	27	42	49	64
Etowah	59	51	48	52
Fayette	6	32	47	41
Franklin	45	49	20	15
Geneva	52	18	15	39
Greene	16	6	22	61
Hale	22	3	3	6
Henry	56	28	25	34
Houston	61	64	61	27
Jackson	29	13	35	22
Jefferson	2	50	31	45
Lamar	4	25	2	3
Lauderdale	14	11	40	17
Lawrence	36	14	13	7
Lee	46	37	43	43
Limestone	62	17	55	24
Lowndes	54	36	18	65
Macon	11	10	62	59
Madison	31	45	54	37
Marengo	17	7	24	40

<b>COUNTY</b>	<b>Arrests for Family Offenses 1998-2000</b>	<b>Prisoners 1998-2000</b>	<b>Adult Property Crime Arrests 1998-2000</b>	<b>Adult Violent Crime Arrests 1998-2000</b>
<b>Marion</b>	55	24	41	16
<b>Marshall</b>	32	16	56	14
<b>Mobile</b>	5	48	63	60
<b>Monroe</b>	43	60	38	66
<b>Montgomery</b>	12	61	28	29
<b>Morgan</b>	20	52	50	28
<b>Perry</b>	53	12	4	50
<b>Pickens</b>	64	44	36	26
<b>Pike</b>	39	47	51	53
<b>Randolph</b>	44	65	46	42
<b>Russell</b>	41	67	67	62
<b>Saint Clair</b>	25	57	23	13
<b>Shelby</b>	40	5	11	12
<b>Sumter</b>	13	1	17	20
<b>Talladega</b>	28	39	42	10
<b>Tallapoosa</b>	33	41	59	44
<b>Tuscaloosa</b>	3	46	64	49
<b>Walker</b>	50	34	58	35
<b>Washington</b>	1	19	6	8
<b>Wilcox</b>	51	4	34	67
<b>Winston</b>	63	40	44	51

**Table C-10. County Rankings on Juvenile Crime: Juvenile Curfew, Vandalism, and Disorderly Conduct Arrests, Juvenile Property Crime Arrests, and Personal and Property Crime Arrests for Juveniles Aged 10 to 14**

<b>COUNTY</b>	<b>Juvenile Curfew, Vandalism, and Disorderly Conduct Arrests 1998-2000</b>	<b>Juvenile Property Crime Arrests 1998-2000</b>	<b>Personal and Property Crime Arrests for Juveniles Aged 10 to 14 (1998 to 2000)</b>
<b>Autauga</b>	59	61	54
<b>Baldwin</b>	45	49	41
<b>Barbour</b>	49	47	47
<b>Bibb</b>	1	1	1
<b>Blount</b>	39	20	14
<b>Bullock</b>	12	11	13
<b>Butler</b>	60	42	36
<b>Calhoun</b>	50	52	40
<b>Chambers</b>	56	39	35
<b>Cherokee</b>	4	7	1
<b>Chilton</b>	15	12	3
<b>Choctaw</b>	1	1	1
<b>Clarke</b>	40	46	37
<b>Clay</b>	1	1	1
<b>Cleburne</b>	24	3	1
<b>Coffee</b>	51	50	45
<b>Colbert</b>	30	29	30
<b>Conecuh</b>	26	21	8
<b>Coosa</b>	18	27	1
<b>Covington</b>	41	40	31
<b>Crenshaw</b>	11	22	17
<b>Cullman</b>	21	28	22
<b>Dale</b>	53	43	39
<b>Dallas</b>	28	44	38
<b>DeKalb</b>	19	18	12
<b>Elmore</b>	44	34	26
<b>Escambia</b>	27	31	32
<b>Etowah</b>	10	13	5
<b>Fayette</b>	36	35	28
<b>Franklin</b>	14	23	9
<b>Geneva</b>	22	15	16
<b>Greene</b>	32	25	34
<b>Hale</b>	5	1	1
<b>Henry</b>	17	33	33
<b>Houston</b>	61	60	53
<b>Jackson</b>	7	4	2
<b>Jefferson</b>	31	56	48
<b>Lamar</b>	1	1	1
<b>Lauderdale</b>	54	55	44
<b>Lawrence</b>	2	2	1
<b>Lee</b>	47	57	51
<b>Limestone</b>	42	51	42
<b>Lowndes</b>	9	1	1

<b>COUNTY</b>	<b>Juvenile Curfew, Vandalism, and Disorderly Conduct Arrests 1998-2000</b>	<b>Juvenile Property Crime Arrests 1998-2000</b>	<b>Personal and Property Crime Arrests for Juveniles Aged 10 to 14 (1998 to 2000)</b>
<b>Madison</b>	58	58	50
<b>Marengo</b>	34	16	18
<b>Marion</b>	38	37	23
<b>Marshall</b>	37	38	20
<b>Mobile</b>	57	59	52
<b>Monroe</b>	16	24	24
<b>Montgomery</b>	33	48	46
<b>Morgan</b>	46	54	43
<b>Perry</b>	1	5	7
<b>Pickens</b>	13	6	1
<b>Pike</b>	29	26	15
<b>Randolph</b>	1	9	1
<b>Russell</b>	35	45	29
<b>Saint Clair</b>	20	17	11
<b>Shelby</b>	3	8	4
<b>Sumter</b>	6	30	21
<b>Talladega</b>	52	36	27
<b>Tallapoosa</b>	48	53	49
<b>Tuscaloosa</b>	43	62	55
<b>Walker</b>	23	41	25
<b>Washington</b>	8	19	10
<b>Wilcox</b>	25	14	6
<b>Winston</b>	1	10	1

**Table C-11. Counting Rankings on  
Voting: Voters**

<b>COUNTY</b>	<b>Voters 2000</b>
<b>Autauga</b>	17
<b>Baldwin</b>	22
<b>Barbour</b>	67
<b>Bibb</b>	55
<b>Blount</b>	49
<b>Bullock</b>	11
<b>Butler</b>	31
<b>Calhoun</b>	56
<b>Chambers</b>	61
<b>Cherokee</b>	63
<b>Chilton</b>	28
<b>Choctaw</b>	4
<b>Clarke</b>	21
<b>Clay</b>	20
<b>Cleburne</b>	43
<b>Coffee</b>	53
<b>Colbert</b>	26
<b>Conecuh</b>	23
<b>Coosa</b>	34
<b>Covington</b>	47
<b>Crenshaw</b>	54
<b>Cullman</b>	29
<b>Dale</b>	58
<b>Dallas</b>	15
<b>DeKalb</b>	64
<b>Elmore</b>	38
<b>Escambia</b>	66
<b>Etowah</b>	30
<b>Fayette</b>	16
<b>Franklin</b>	51
<b>Geneva</b>	36
<b>Greene</b>	5
<b>Hale</b>	3
<b>Henry</b>	14
<b>Houston</b>	37
<b>Jackson</b>	59
<b>Jefferson</b>	19
<b>Lamar</b>	6
<b>Lauderdale</b>	45
<b>Lawrence</b>	50
<b>Lee</b>	60
<b>Limestone</b>	42
<b>Lowndes</b>	2
<b>Macon</b>	35
<b>Madison</b>	18
<b>Marengo</b>	7

<b>COUNTY</b>	<b>Voters 2000</b>
<b>Marion</b>	39
<b>Marshall</b>	57
<b>Mobile</b>	41
<b>Monroe</b>	27
<b>Montgomery</b>	40
<b>Morgan</b>	25
<b>Perry</b>	1
<b>Pickens</b>	13
<b>Pike</b>	52
<b>Randolph</b>	48
<b>Russell</b>	65
<b>Saint Clair</b>	32
<b>Shelby</b>	9
<b>Sumter</b>	10
<b>Talladega</b>	62
<b>Tallapoosa</b>	24
<b>Tuscaloosa</b>	44
<b>Walker</b>	46
<b>Washington</b>	8
<b>Wilcox</b>	12
<b>Winston</b>	33

**Table C-12. County Rankings on Protective Factors:  
Church Organizations and Youth Organizations**

<b>COUNTY</b>	<b>Church Organizations 2000</b>	<b>Youth Organizations 2000</b>
<b>Autauga</b>	59	58
<b>Baldwin</b>	9	22
<b>Barbour</b>	48	52
<b>Bibb</b>	6	55
<b>Blount</b>	39	53
<b>Bullock</b>	55	63
<b>Butler</b>	20	33
<b>Calhoun</b>	31	27
<b>Chambers</b>	47	46
<b>Cherokee</b>	45	66
<b>Chilton</b>	51	34
<b>Choctaw</b>	1	45
<b>Clarke</b>	54	16
<b>Clay</b>	38	2
<b>Cleburne</b>	61	67
<b>Coffee</b>	14	59
<b>Colbert</b>	57	31
<b>Conecuh</b>	5	4
<b>Coosa</b>	65	62
<b>Covington</b>	12	49
<b>Crenshaw</b>	23	11
<b>Cullman</b>	53	39
<b>Dale</b>	25	57
<b>Dallas</b>	30	17
<b>DeKalb</b>	28	19
<b>Elmore</b>	40	51
<b>Escambia</b>	4	20
<b>Etowah</b>	16	47
<b>Fayette</b>	41	65
<b>Franklin</b>	44	23
<b>Geneva</b>	11	38
<b>Greene</b>	34	15
<b>Hale</b>	63	54
<b>Henry</b>	10	18
<b>Houston</b>	2	3
<b>Jackson</b>	62	61
<b>Jefferson</b>	13	30
<b>Lamar</b>	66	37
<b>Lauderdale</b>	32	9
<b>Lawrence</b>	26	29
<b>Lee</b>	29	36
<b>Limestone</b>	60	21
<b>Lowndes</b>	7	26
<b>Macon</b>	21	50
<b>Madison</b>	24	42
<b>Marengo</b>	8	14

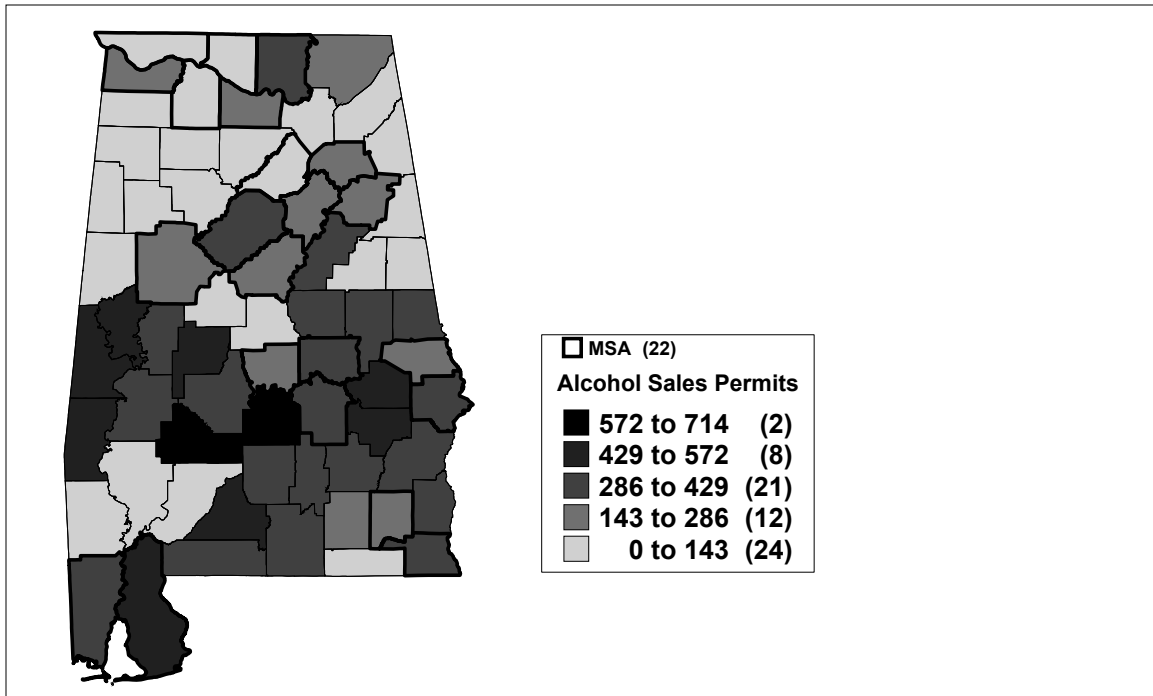
<b>COUNTY</b>	<b>Church Organizations 2000</b>	<b>Youth Organizations 2000</b>
<b>Marion</b>	18	43
<b>Marshall</b>	52	25
<b>Mobile</b>	17	60
<b>Monroe</b>	49	28
<b>Montgomery</b>	15	12
<b>Morgan</b>	27	5
<b>Perry</b>	56	32
<b>Pickens</b>	36	48
<b>Pike</b>	64	6
<b>Randolph</b>	67	1
<b>Russell</b>	33	44
<b>Saint Clair</b>	43	64
<b>Shelby</b>	35	35
<b>Sumter</b>	50	24
<b>Talladega</b>	46	41
<b>Tallapoosa</b>	42	56
<b>Tuscaloosa</b>	22	13
<b>Walker</b>	37	40
<b>Washington</b>	3	10
<b>Wilcox</b>	19	7
<b>Winston</b>	58	8



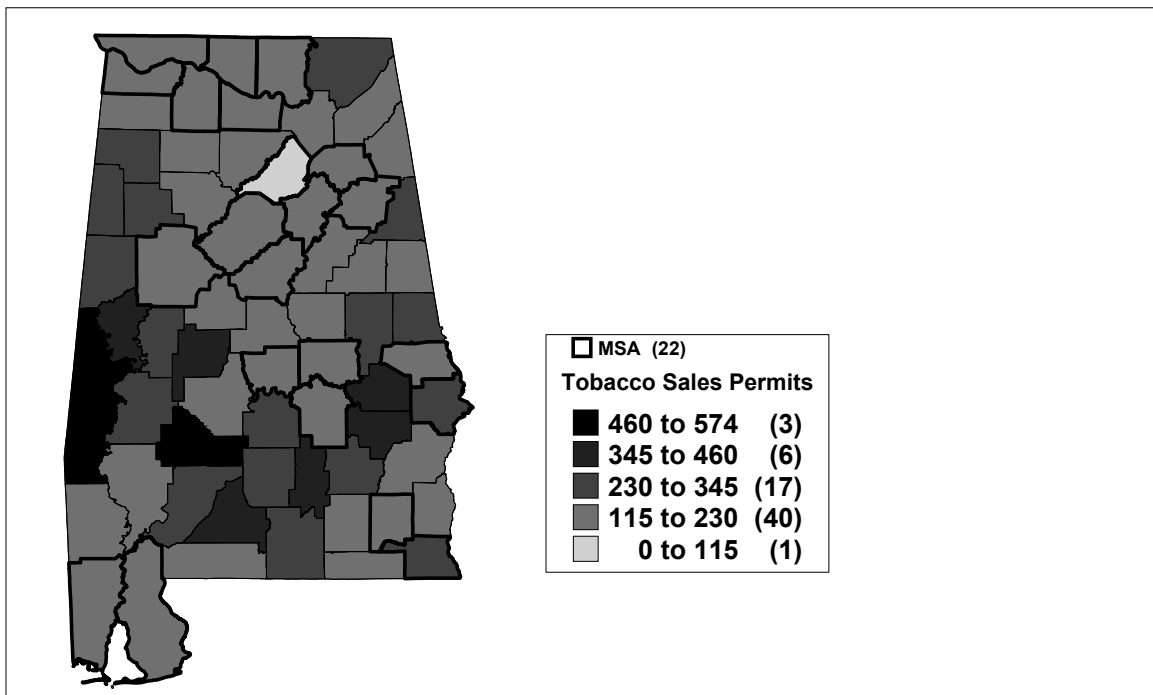
## **APPENDIX D**

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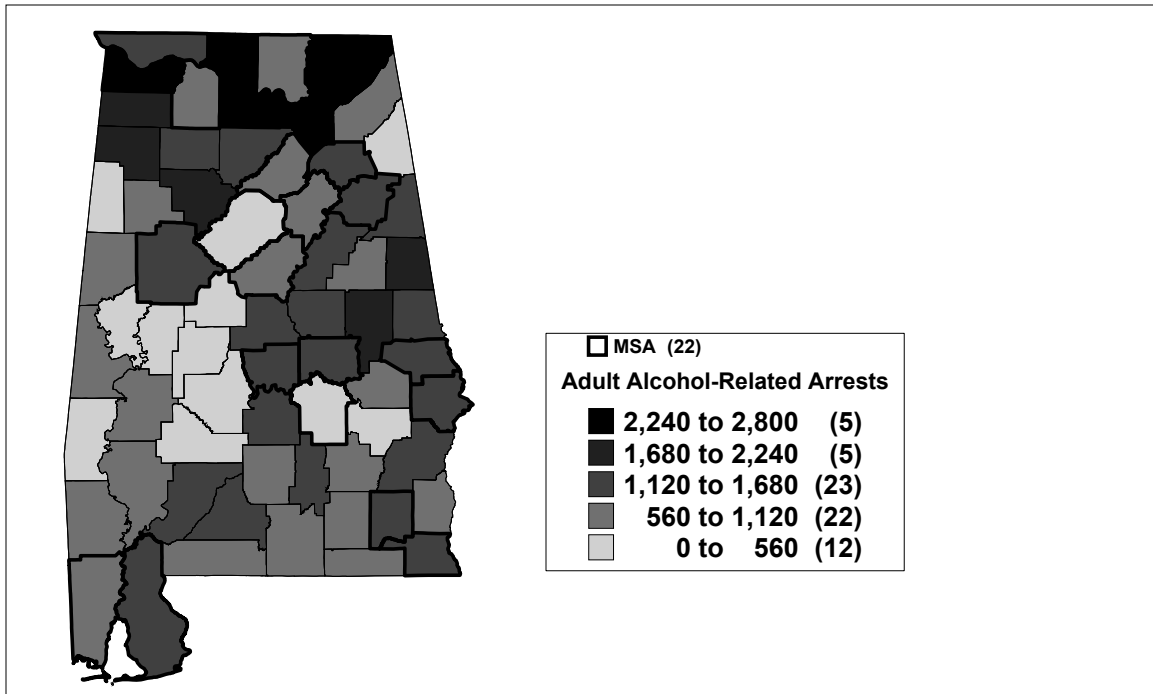
### **MAPS OF INDICATORS**



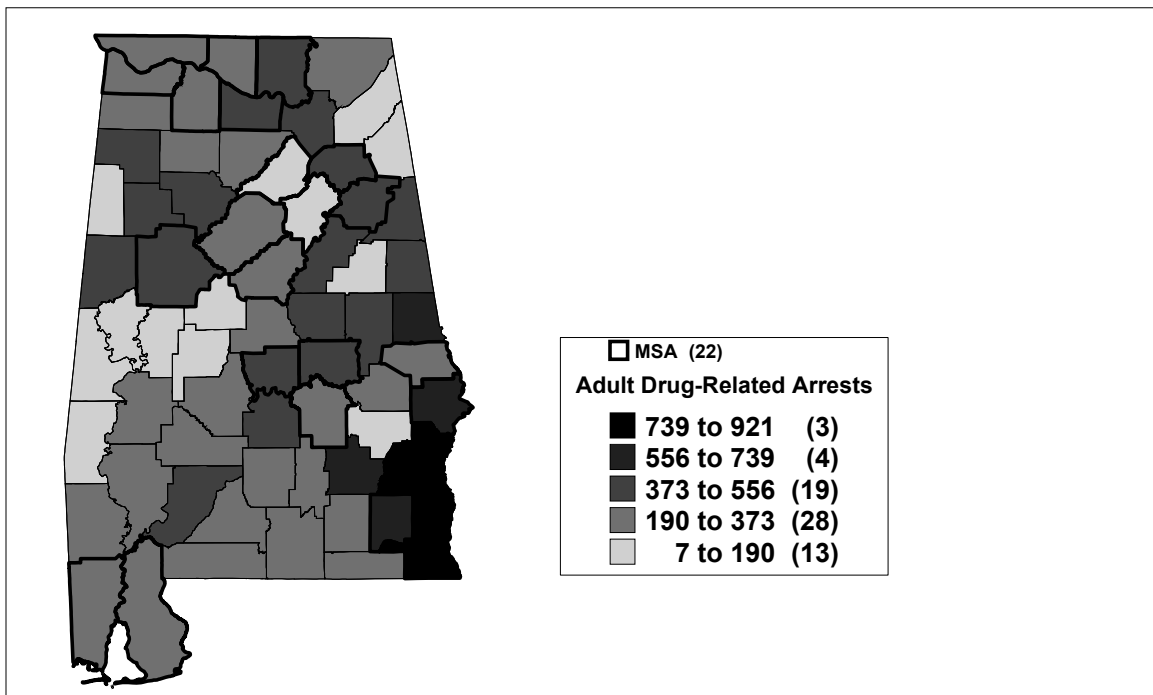
**Figure D-1. Alcohol Sales Permits (Rate per 100,000 People)**



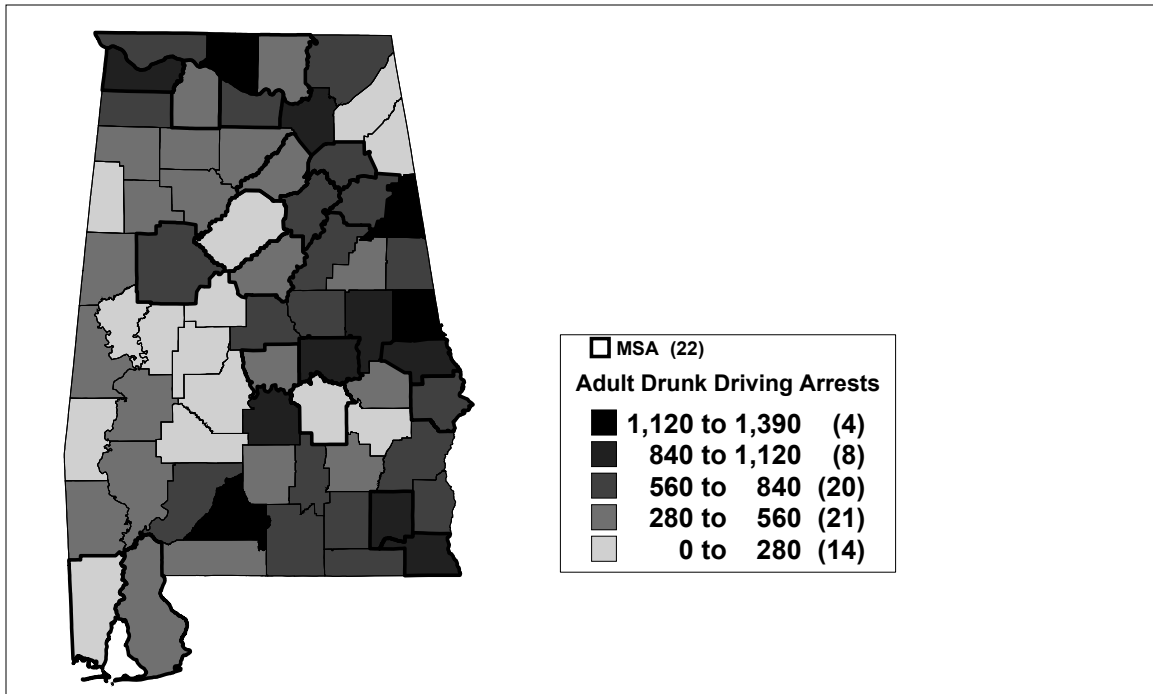
**Figure D-2. Tobacco Sales Permits (Rate per 100,000 People)**



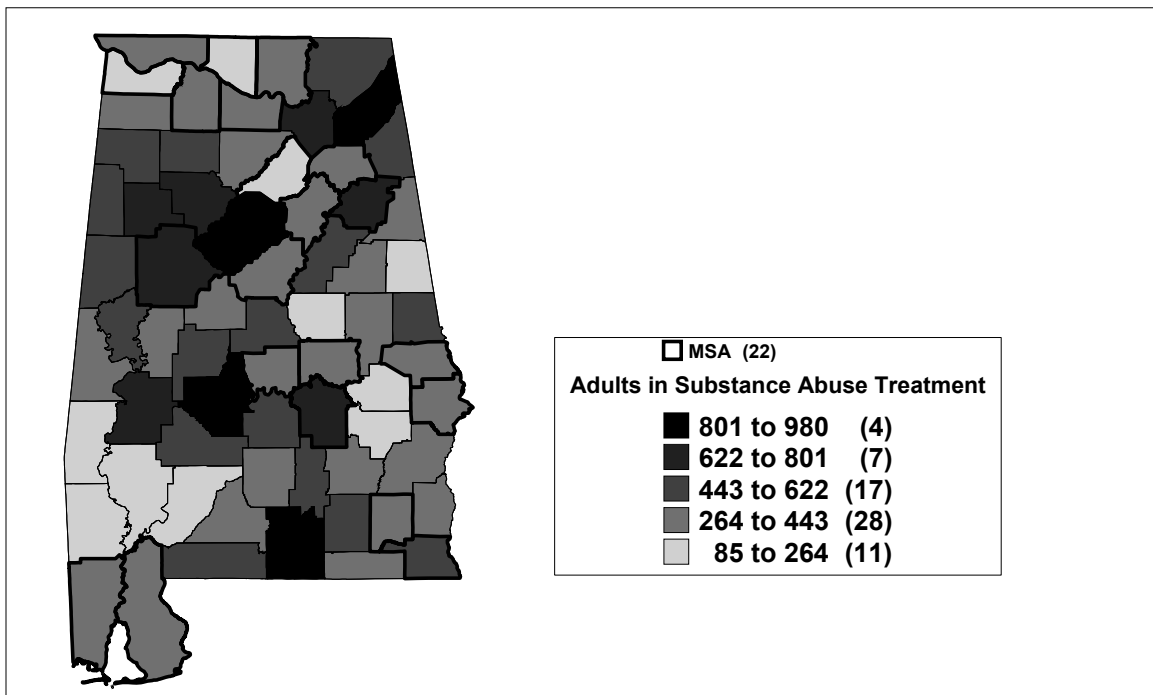
**Figure D-3. Adult Alcohol-Related Arrests (Rate per 100,000 Adults)**



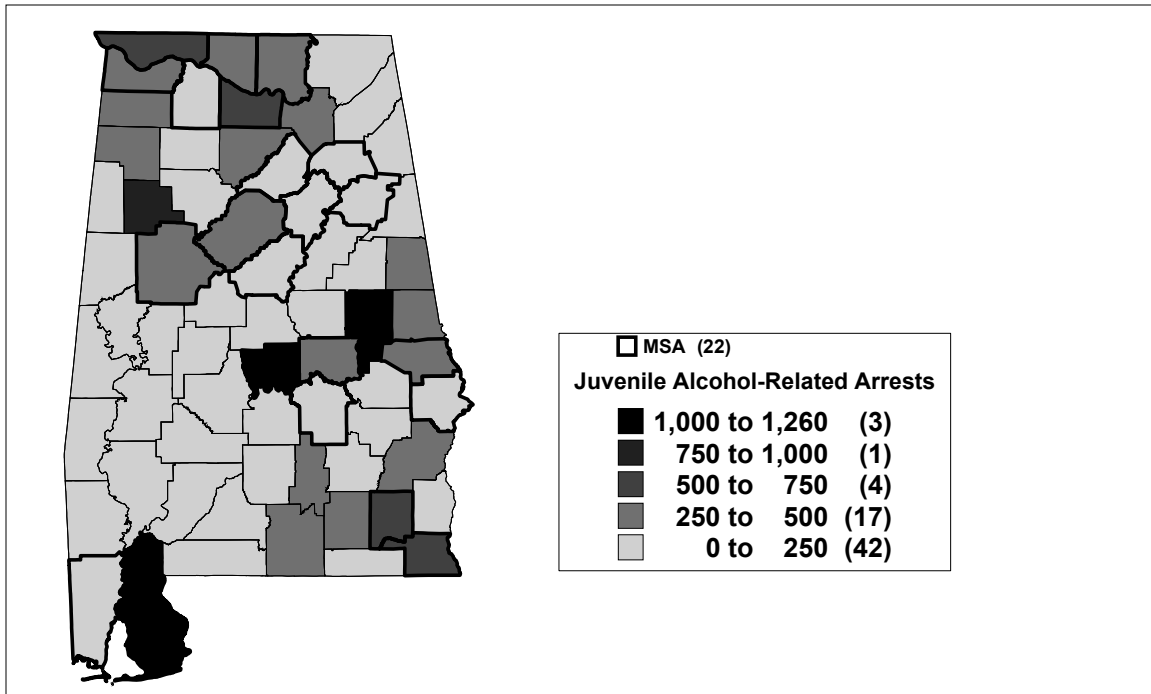
**Figure D-4. Adult Drug-Related Arrests (Rate per 100,000 Adults)**



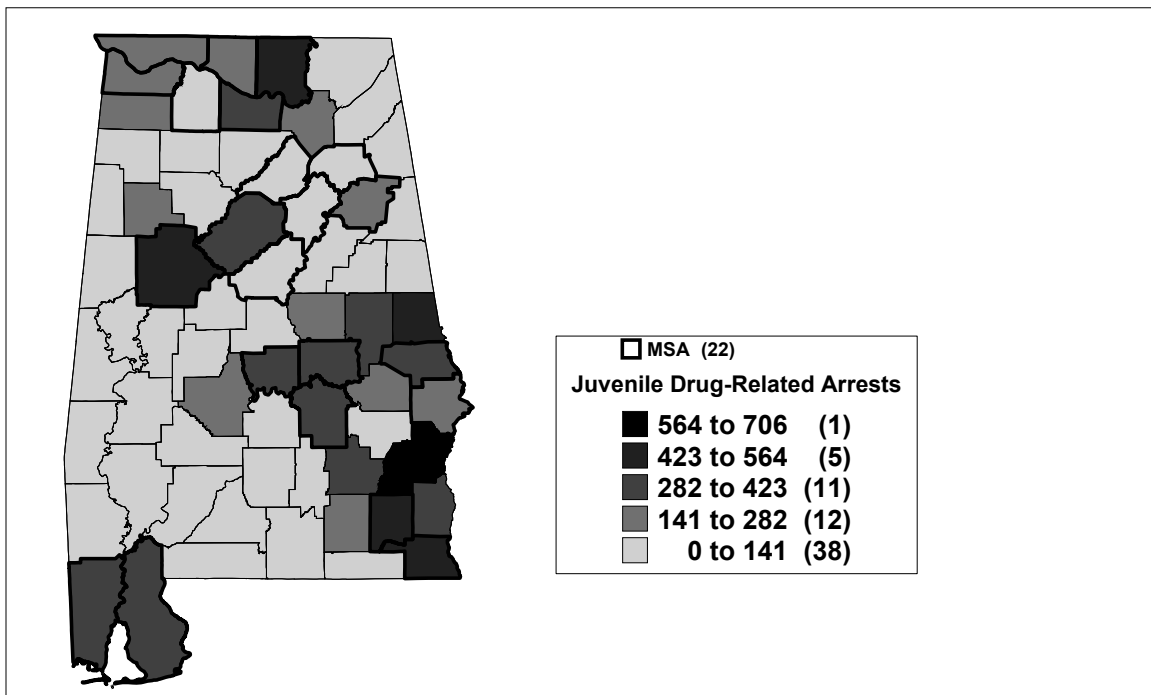
**Figure D-5. Adult Drunk Driving Arrests (Rate per 100,000 Adults)**



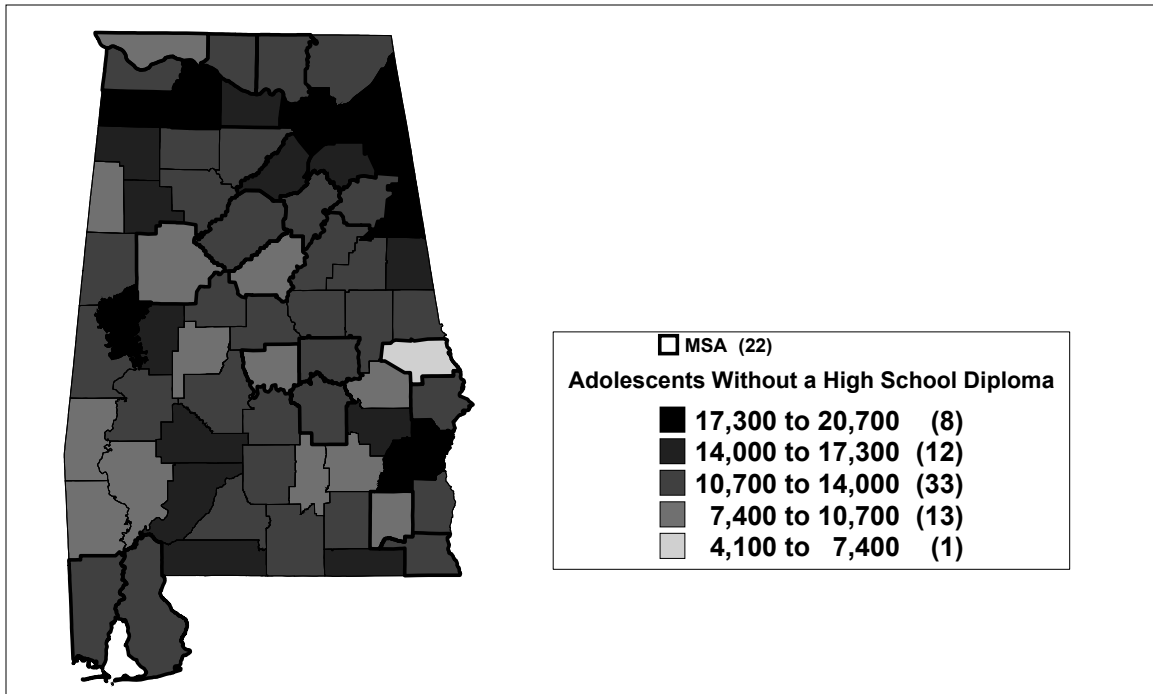
**Figure D-6. Adults in Substance Abuse Treatment (Rate per 100,000 Adults)**



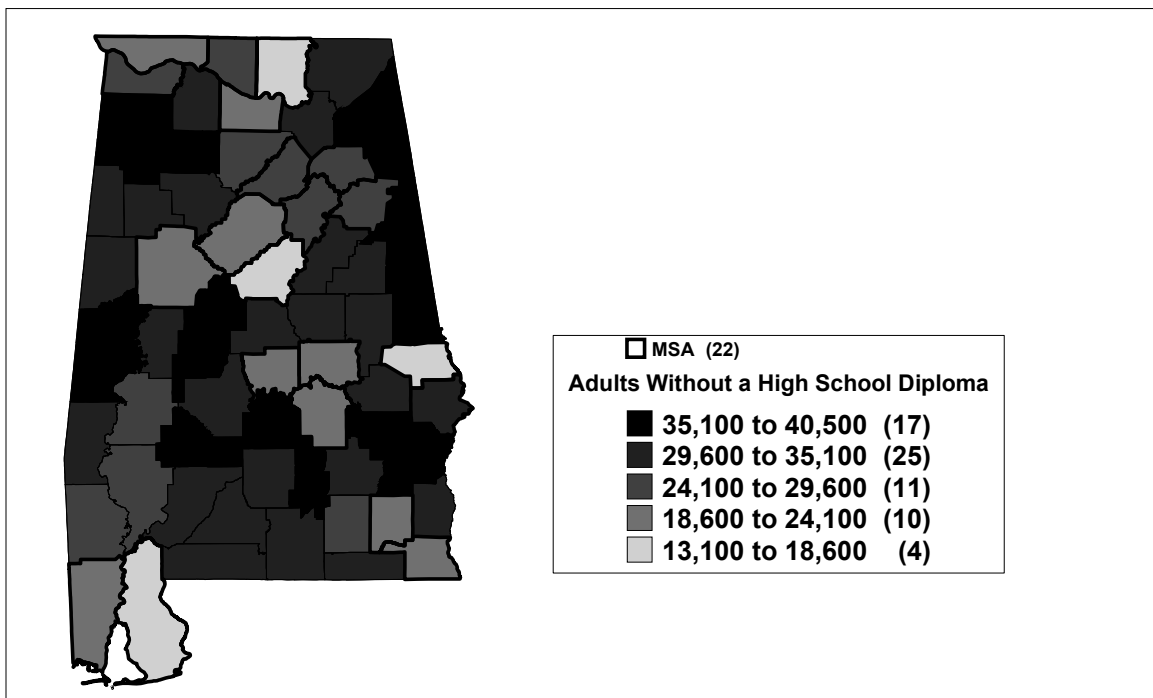
**Figure D-7. Juvenile Alcohol-Related Arrests (Rate per 100,000 Juveniles)**



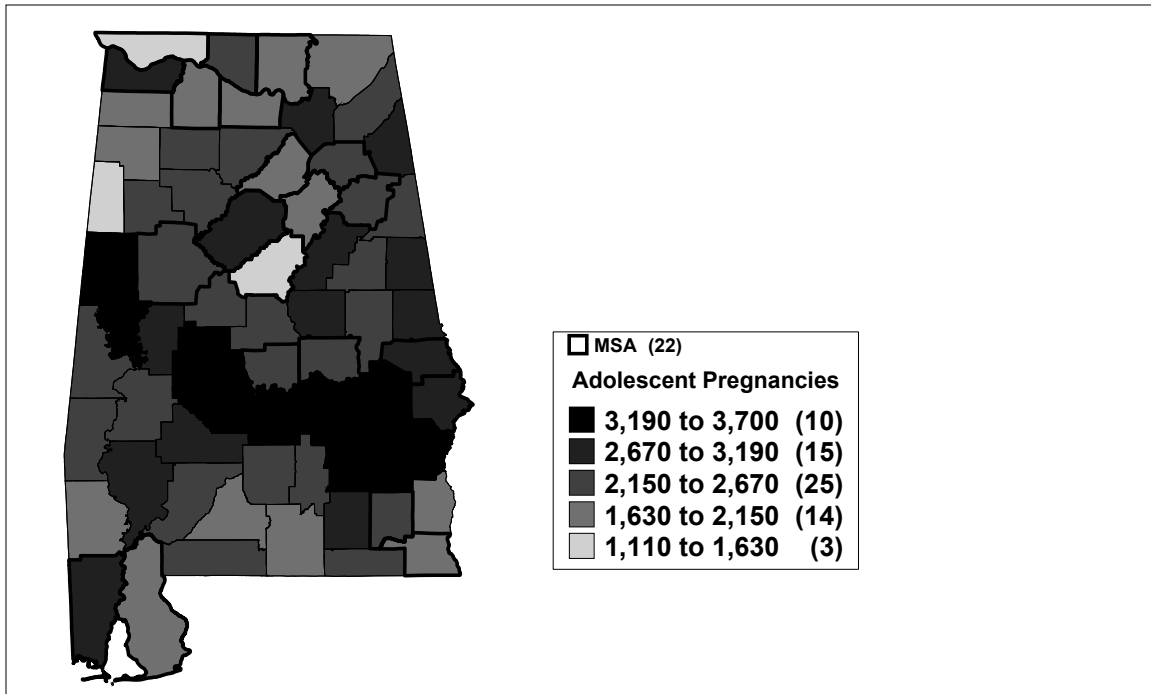
**Figure D-8. Juvenile Drug-Related Arrests (Rate per 100,000 Juveniles)**



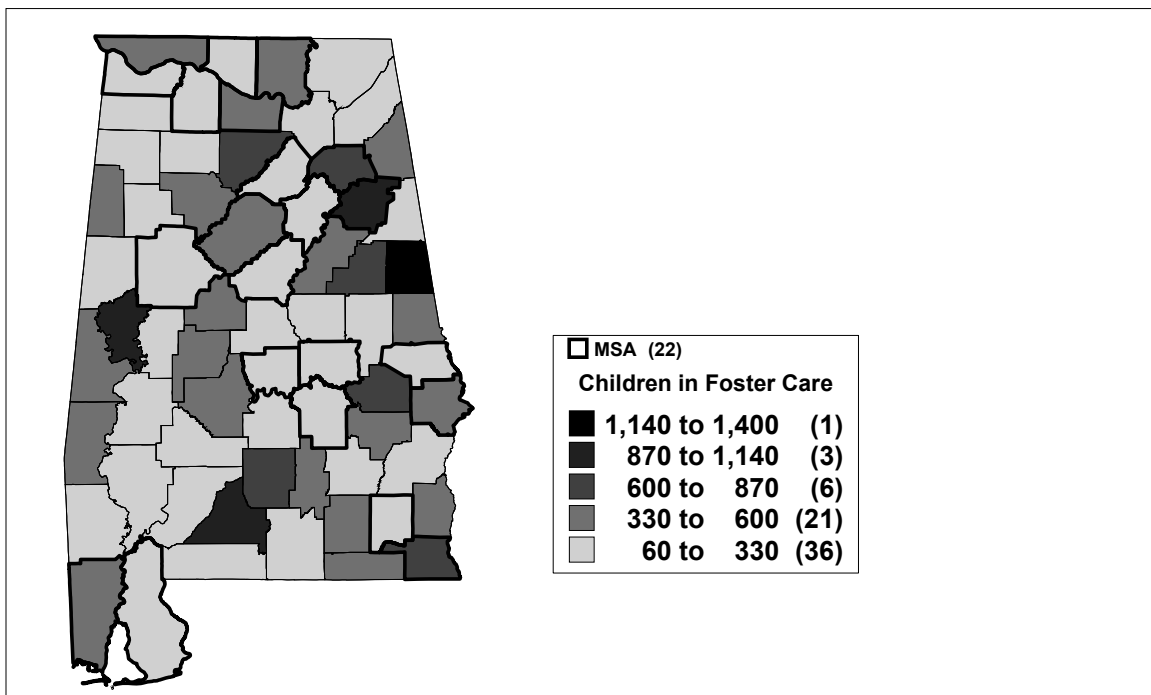
**Figure D-9. Adolescents Without a High School Diploma (Rate per 100,000 Adolescents)**



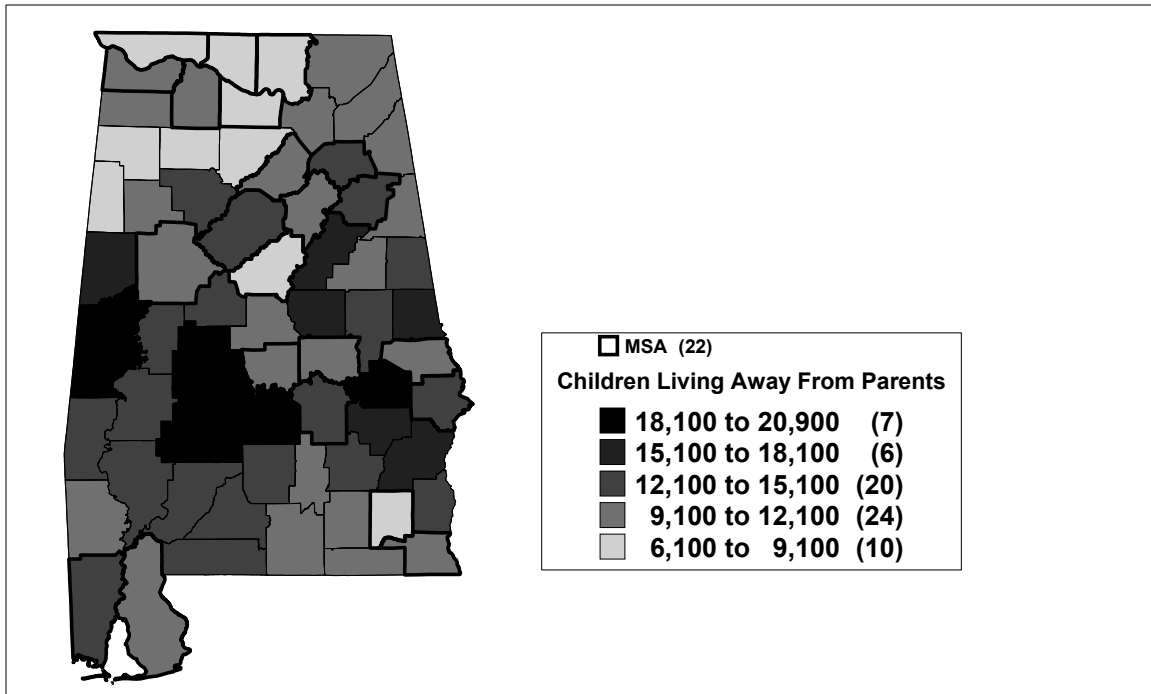
**Figure D-10. Adults Without a High School Diploma (Rate per 100,000 Adults Aged 25 and Older)**



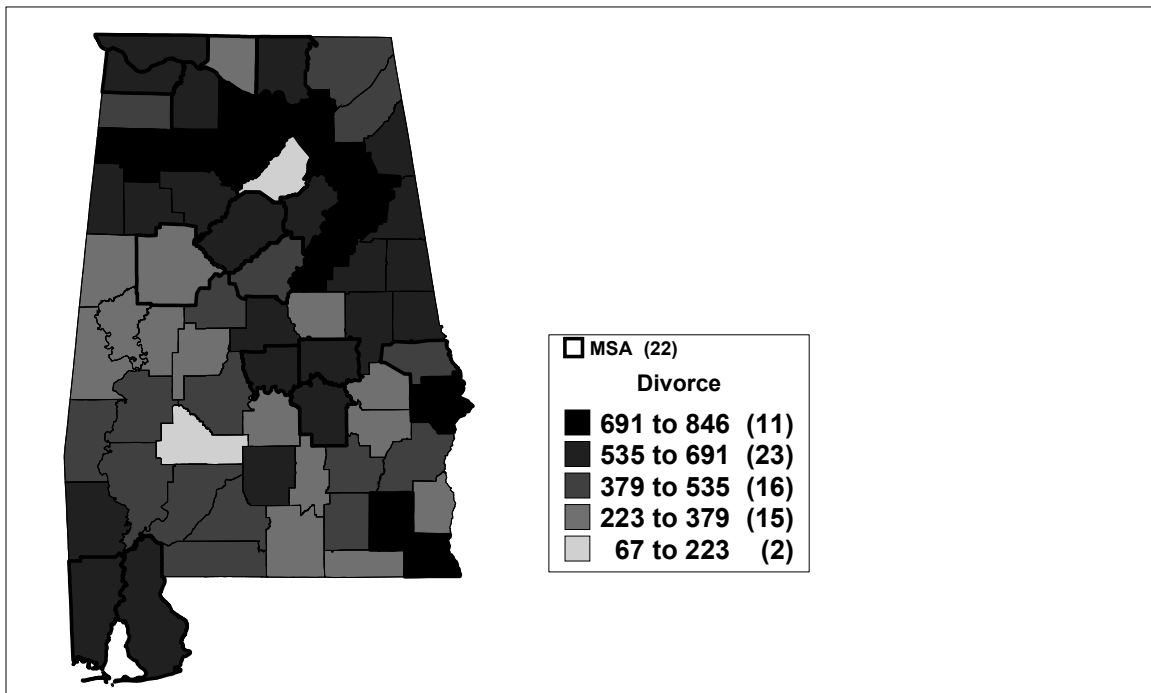
**Figure D-11. Adolescent Pregnancies (Rate per 100,000 Adolescent Females)**



**Figure D-12. Children in Foster Care (Rate per 100,000 Children)**

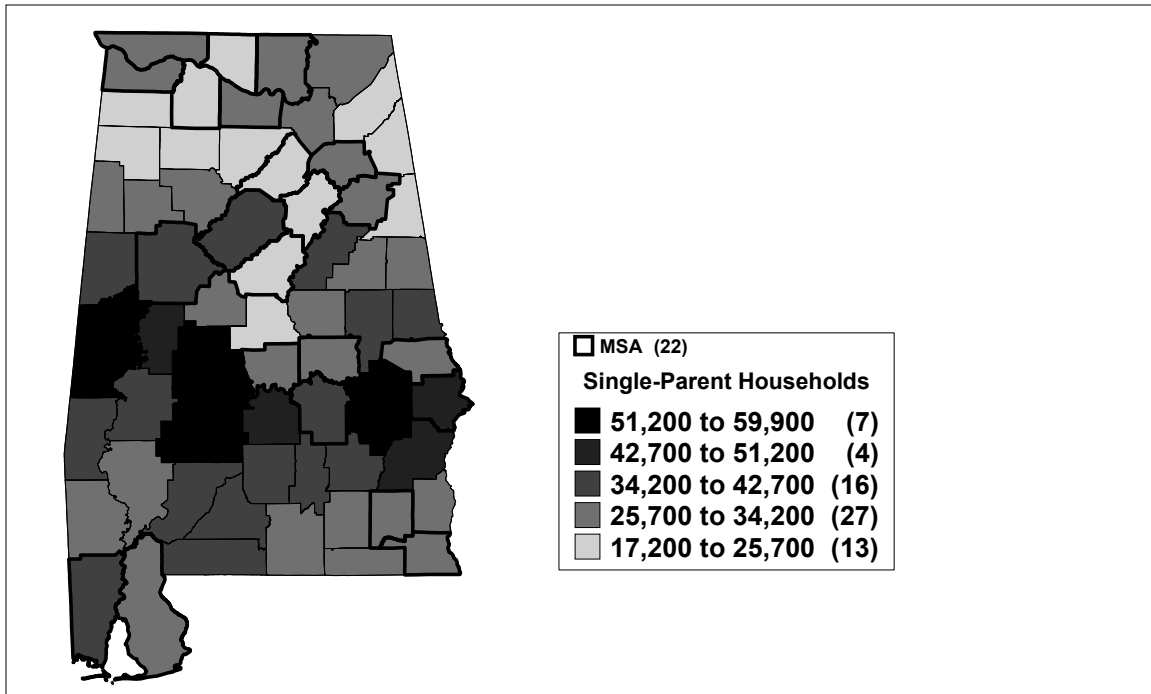


**Figure D-13. Children Living Away From Parents (Rate per 100,000 Children)**

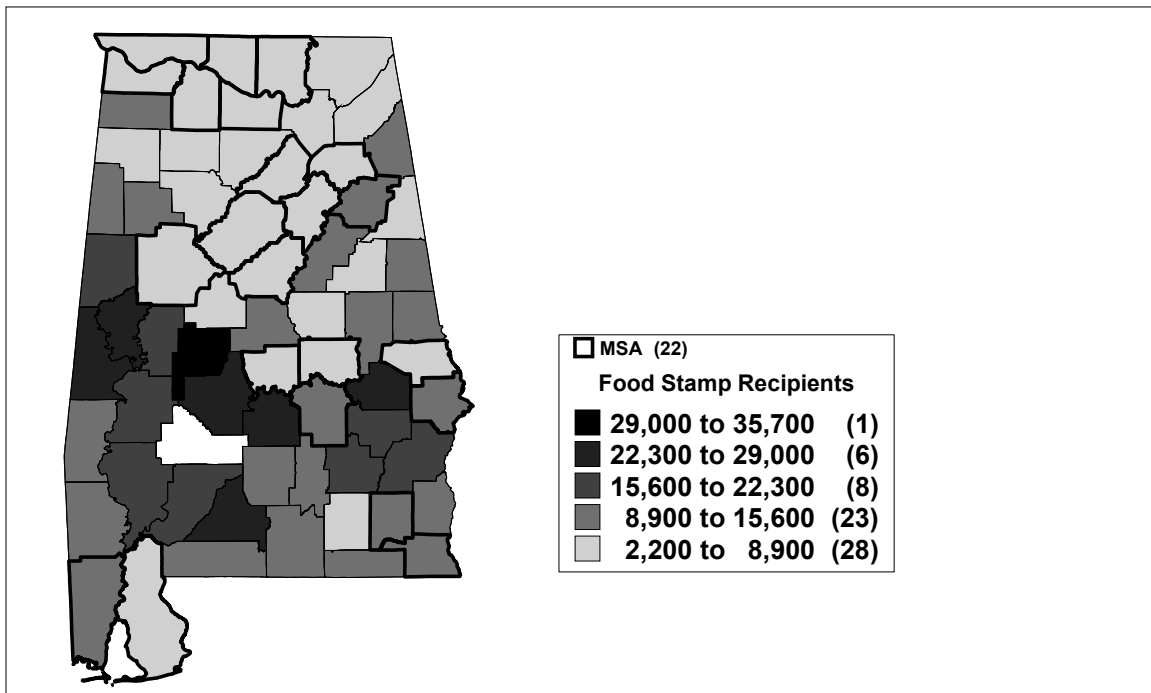


**Figure D-14. Divorce (Rate per 100,000 People)**





**Figure D-15. Single-Parent Households (Rate per 100,000 Family Households)**



**Figure D-16. Food Stamp Recipients (Rate per 100,000 People)**

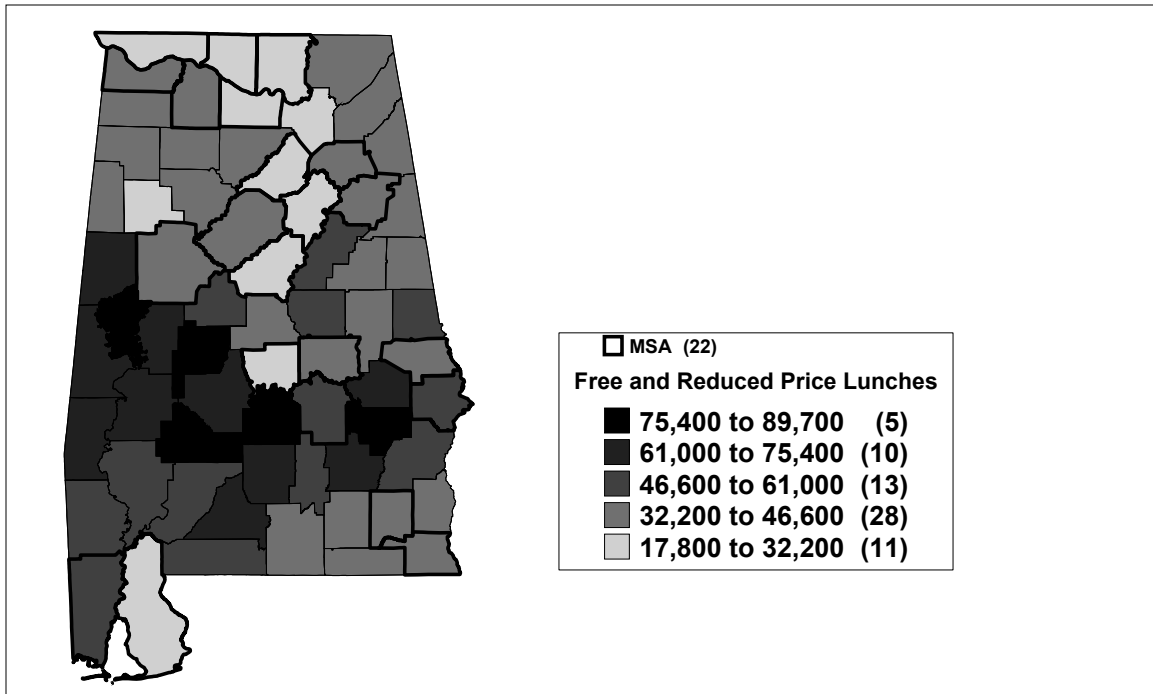


Figure D-17. Free and Reduced Price Lunches (Rate per 100,000 Students)

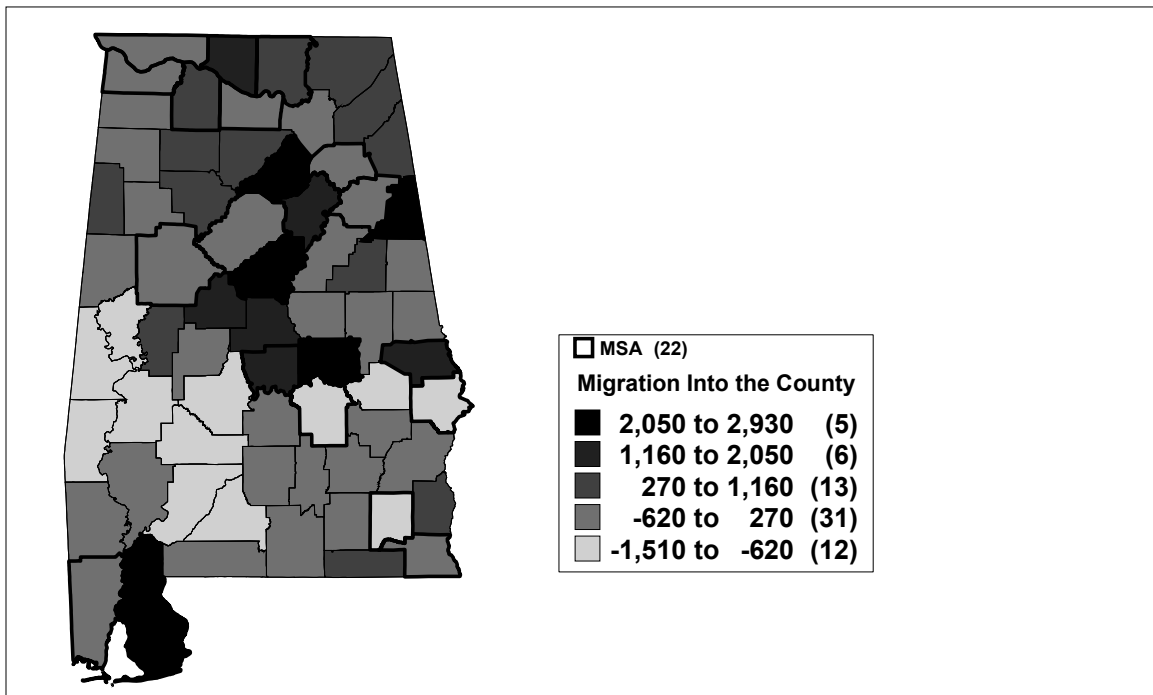
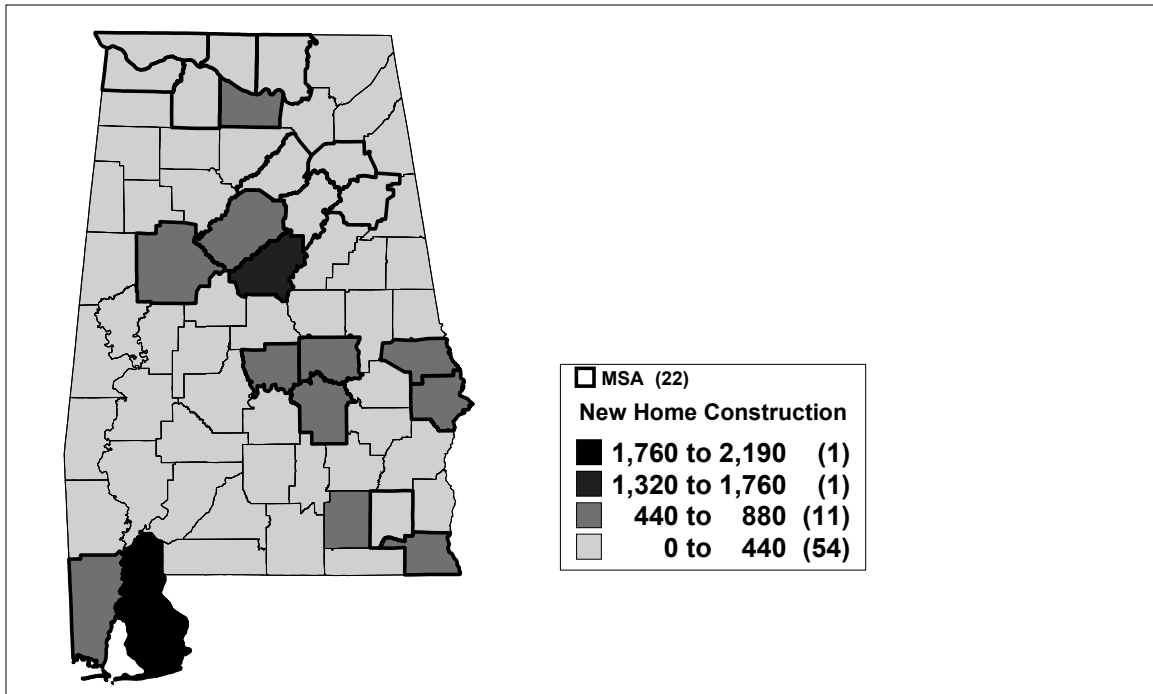
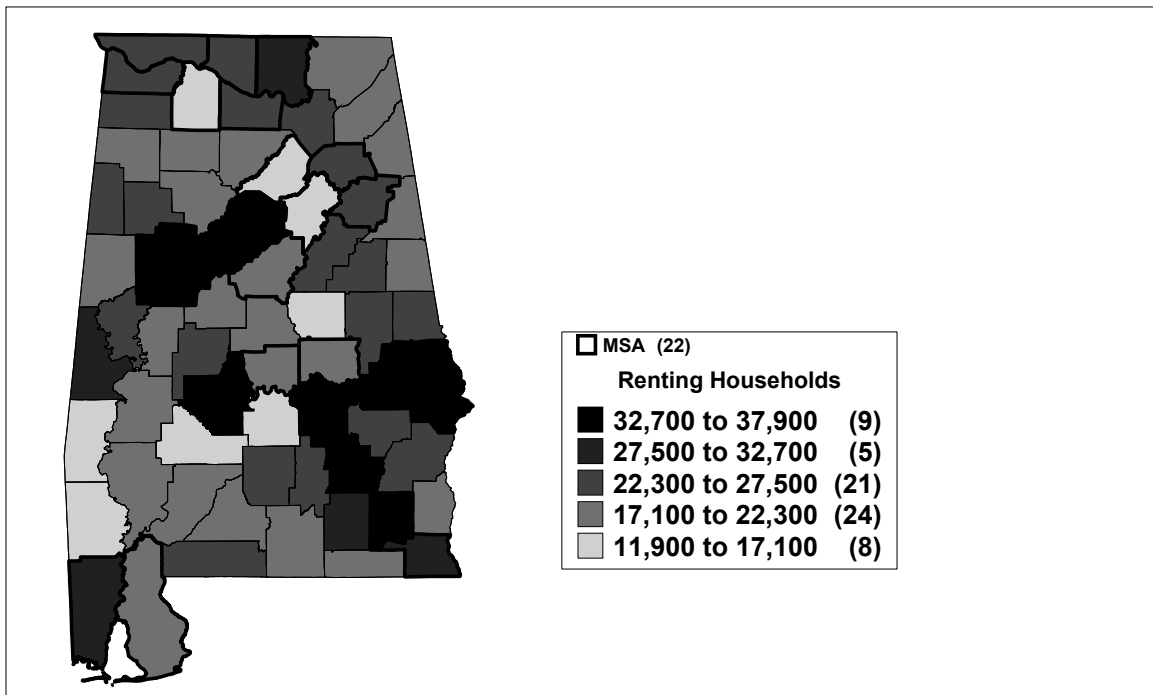


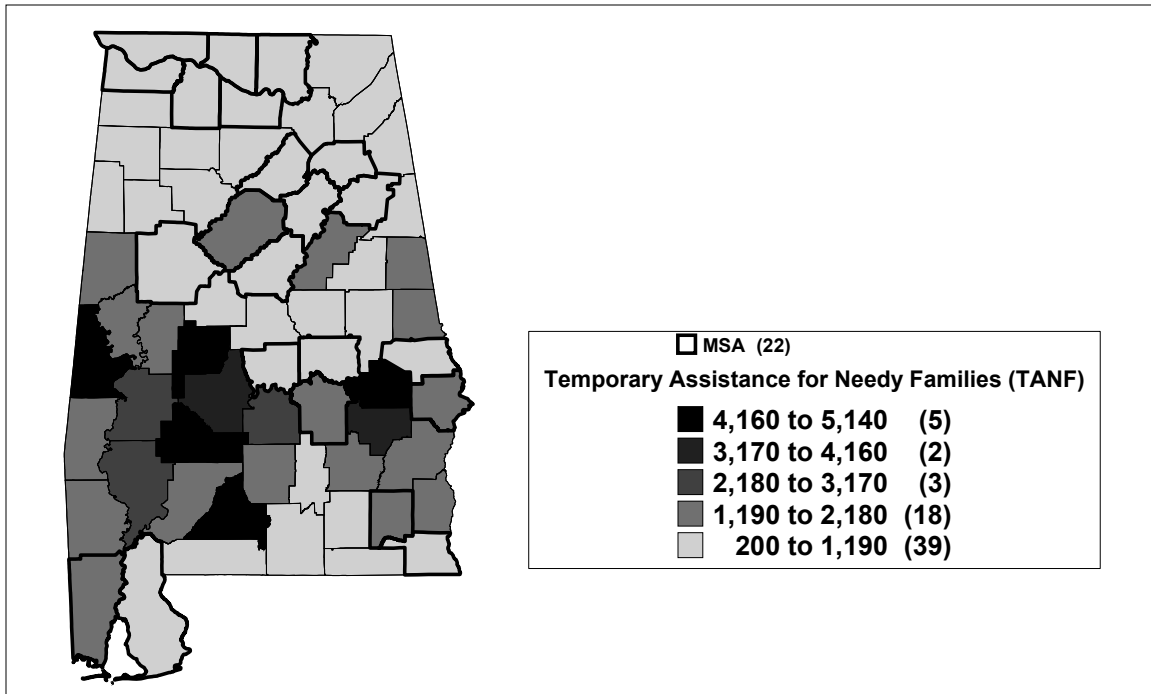
Figure D-18. Migration Into the County (Rate per 100,000 People)



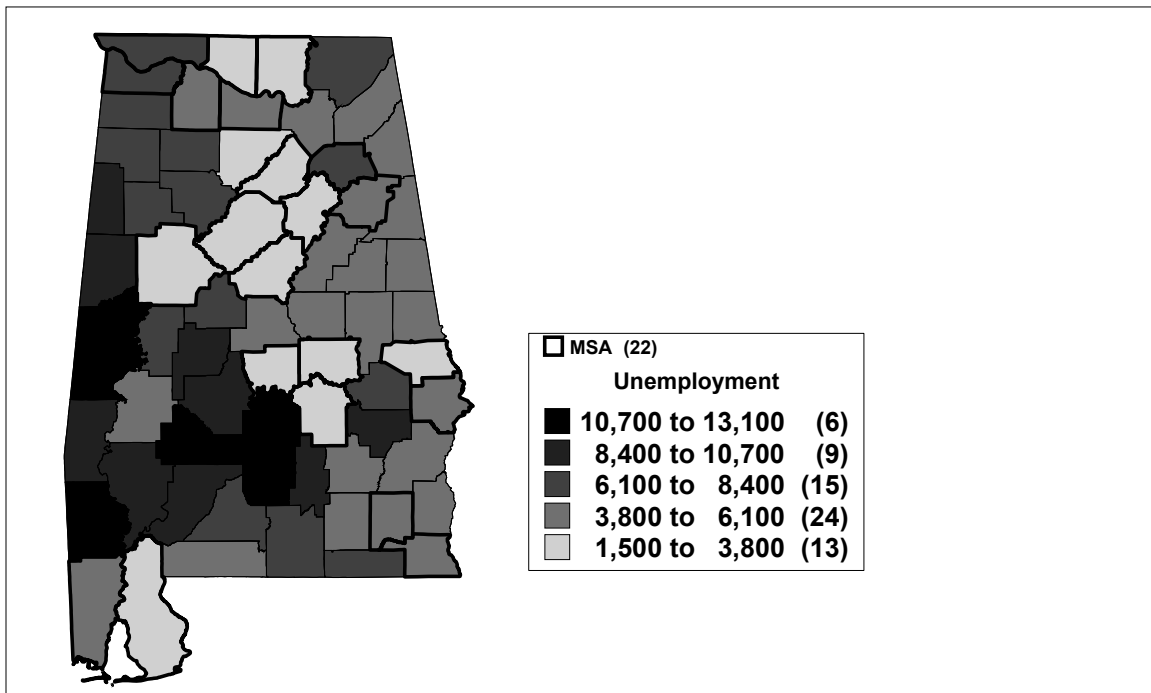
**Figure D-19. New Home Construction (Rate per 100,000 People)**



**Figure D-20. Renting Households (Rate per 100,000 Households)**



**Figure D-21. Temporary Assistance for Needy Families (TANF) (Rate per 100,000 People)**



**Figure D-22. Unemployment (Rate per 100,000 People in the Labor Force)**

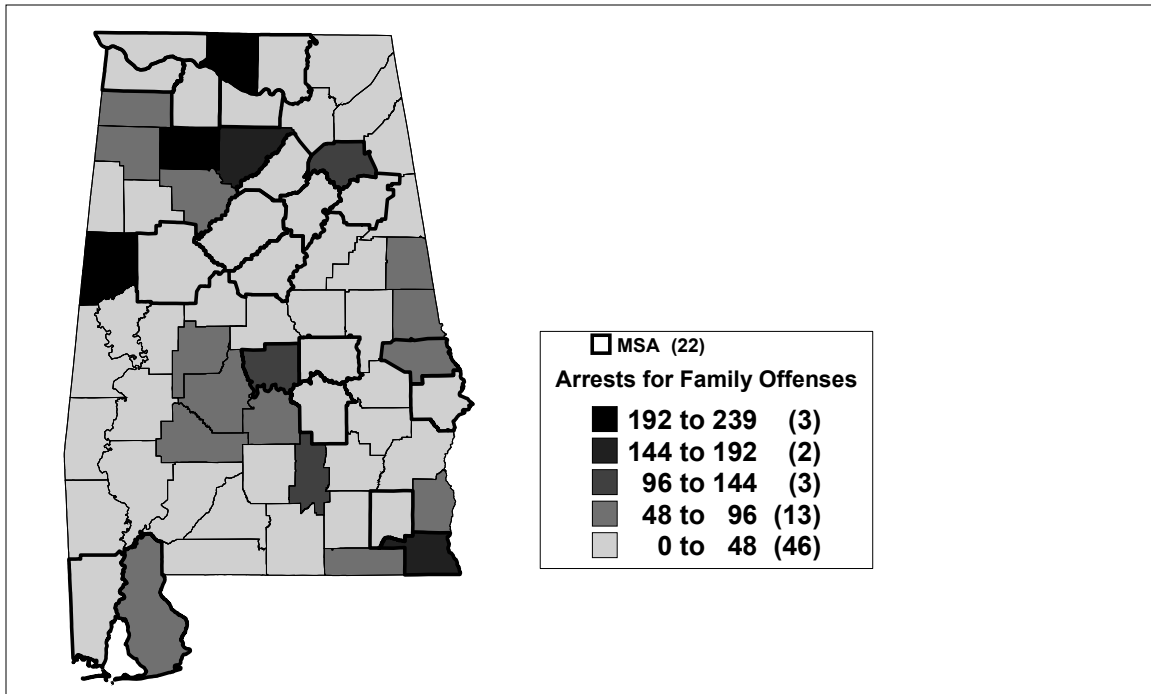


Figure D-23. Arrests for Family Offenses (Rate per 100,000 Adults)

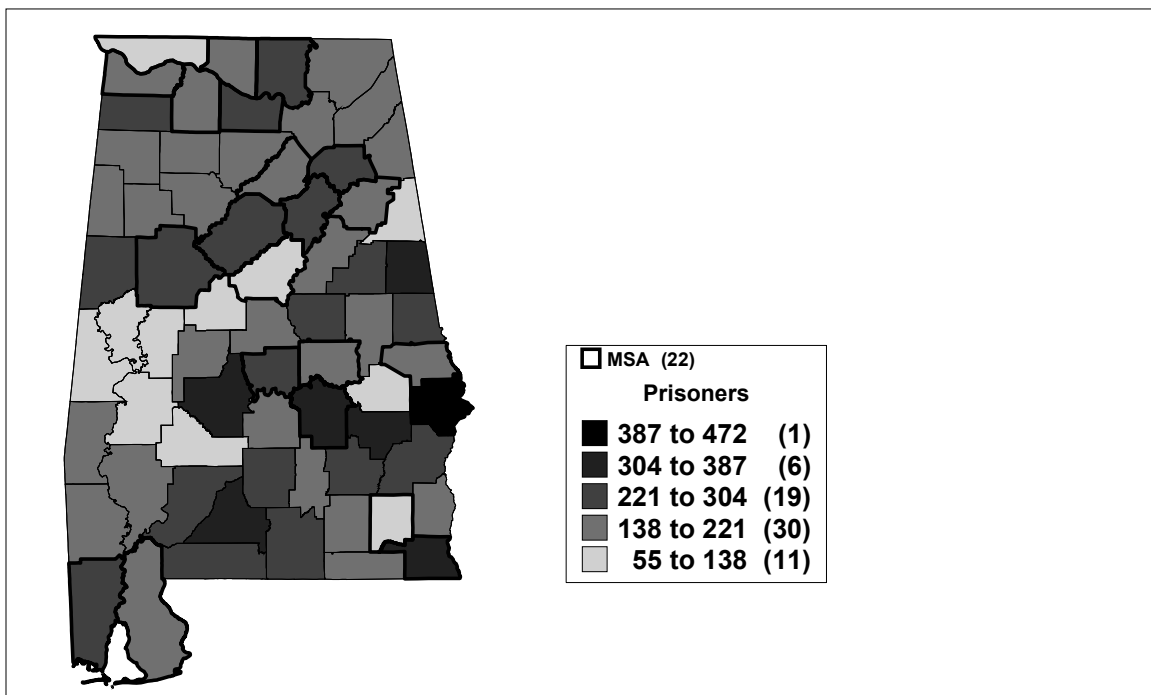


Figure D-24. Prisoners (Rate per 100,000 People)

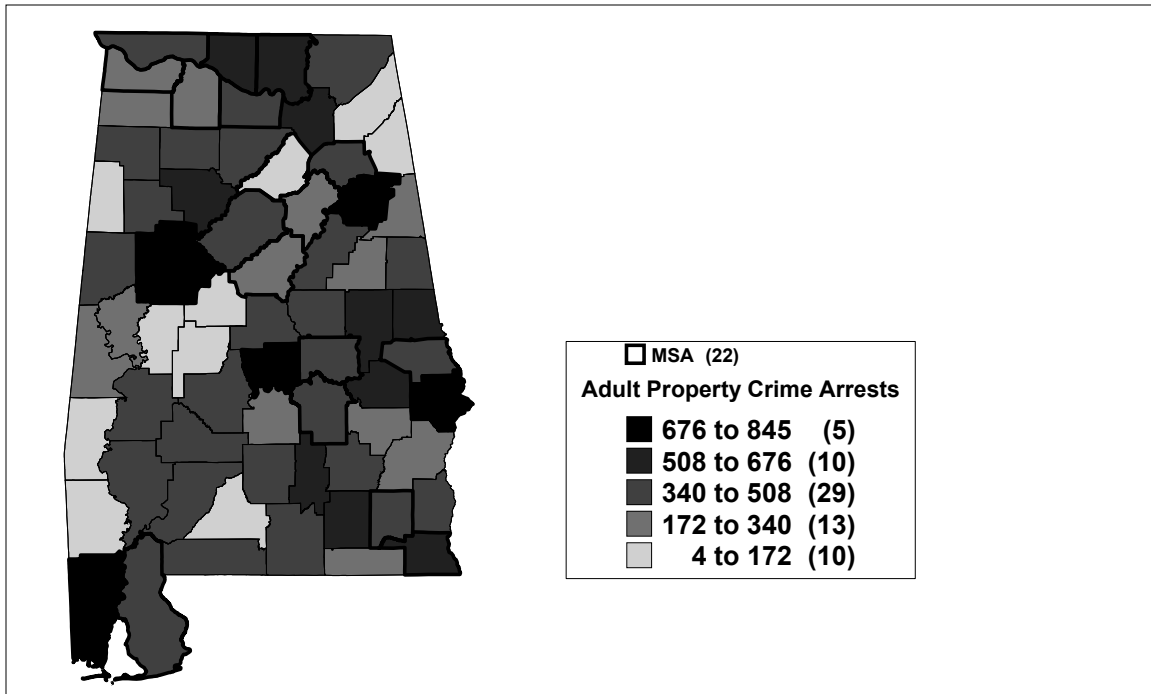


Figure D-25. Adult Property Crime Arrests (Rate per 100,000 Adults)

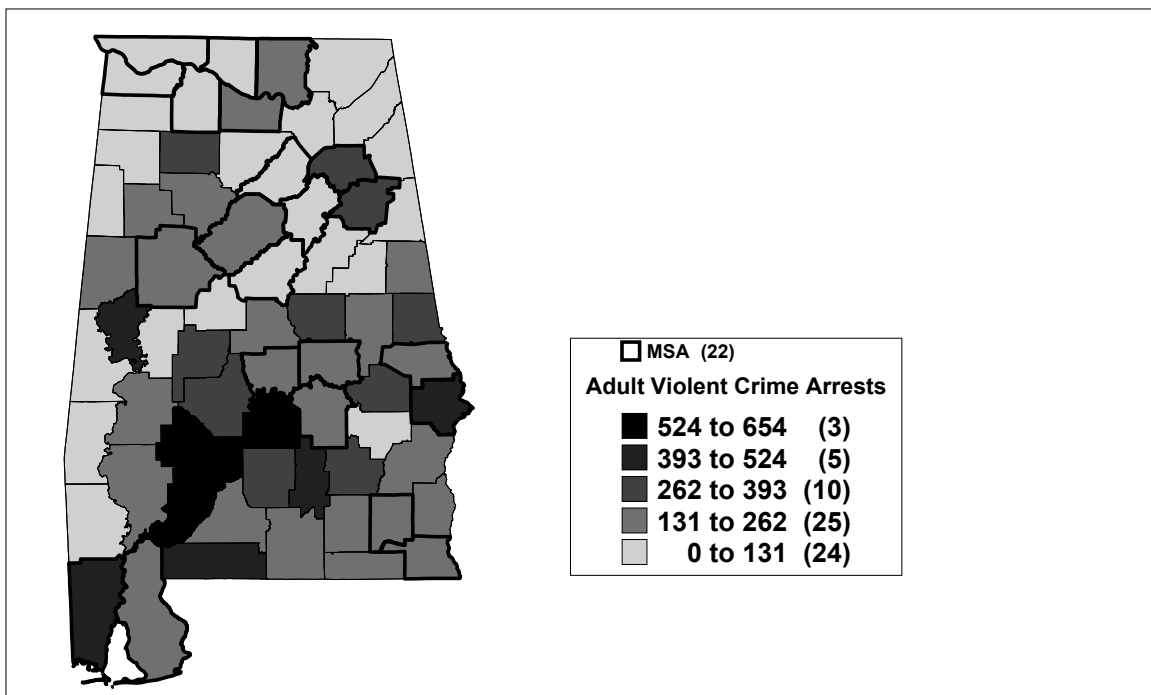
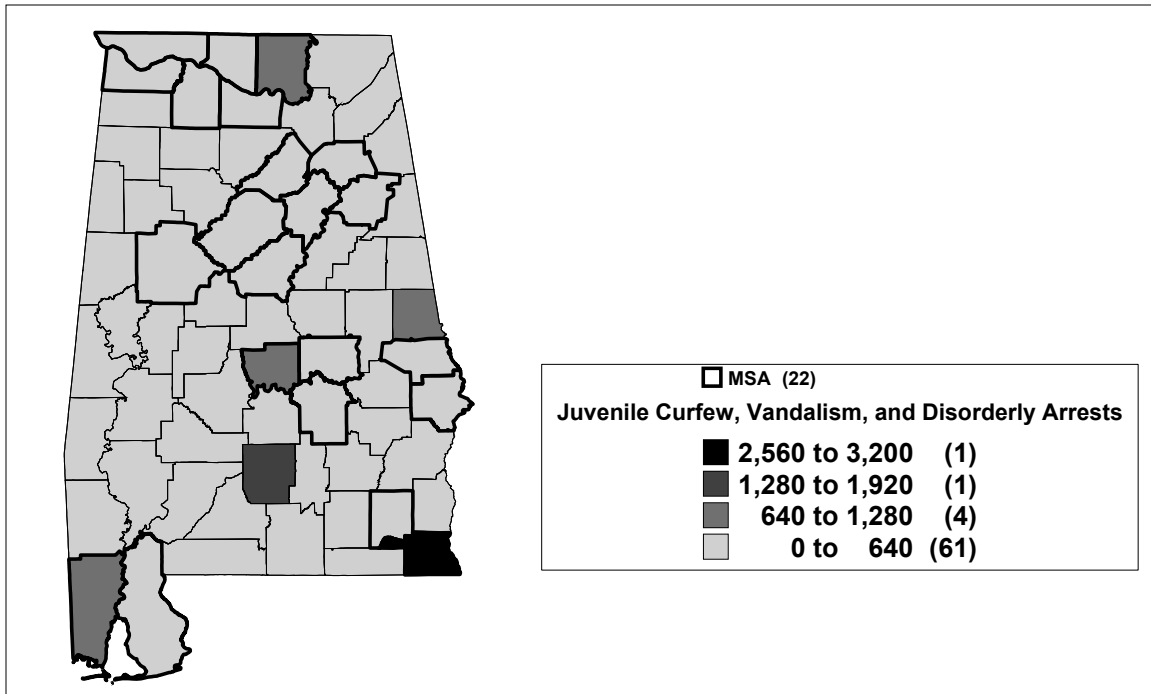
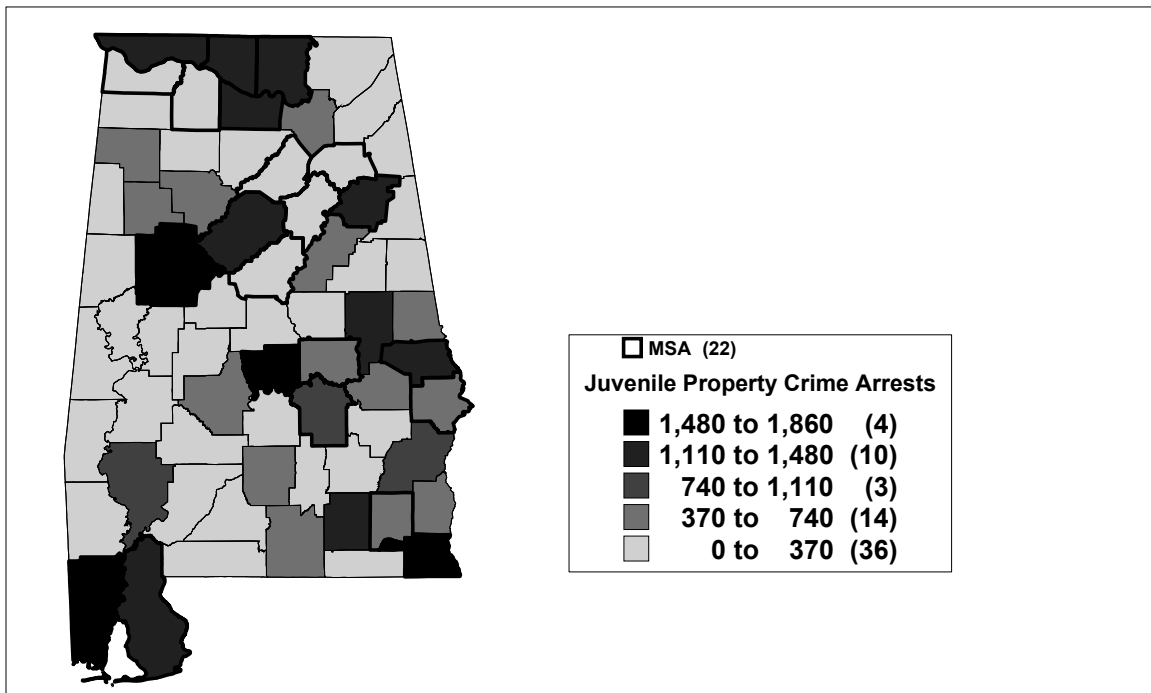


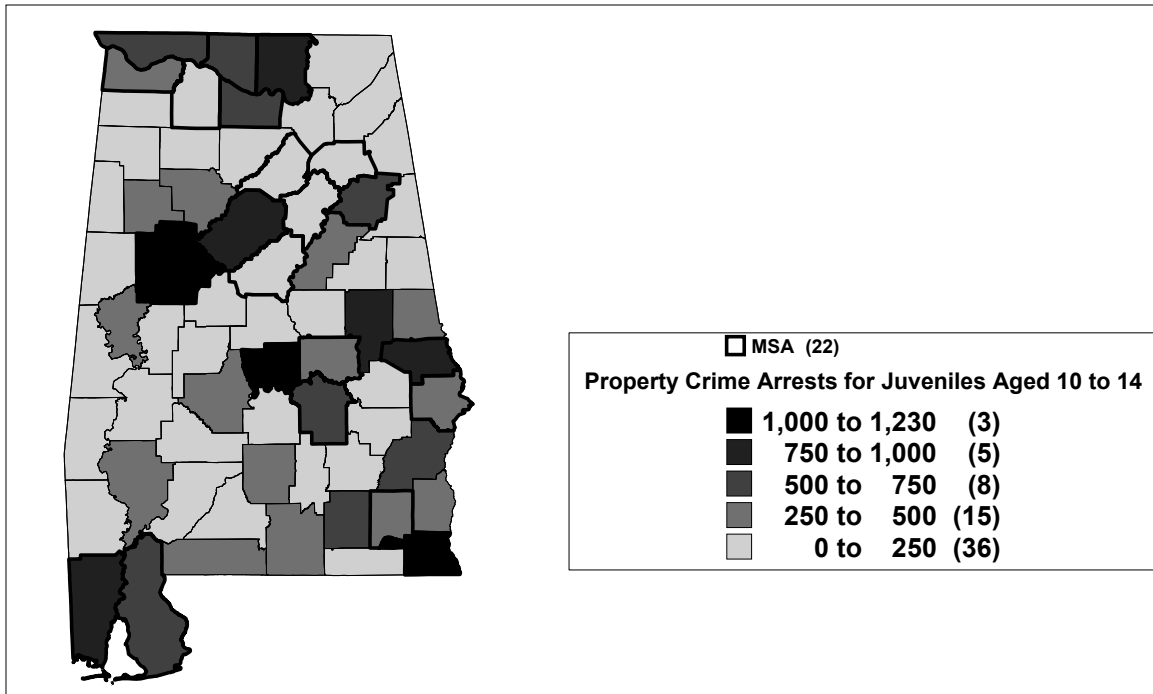
Figure D-26. Adult Violent Crime Arrests (Rate per 100,000 Adults)



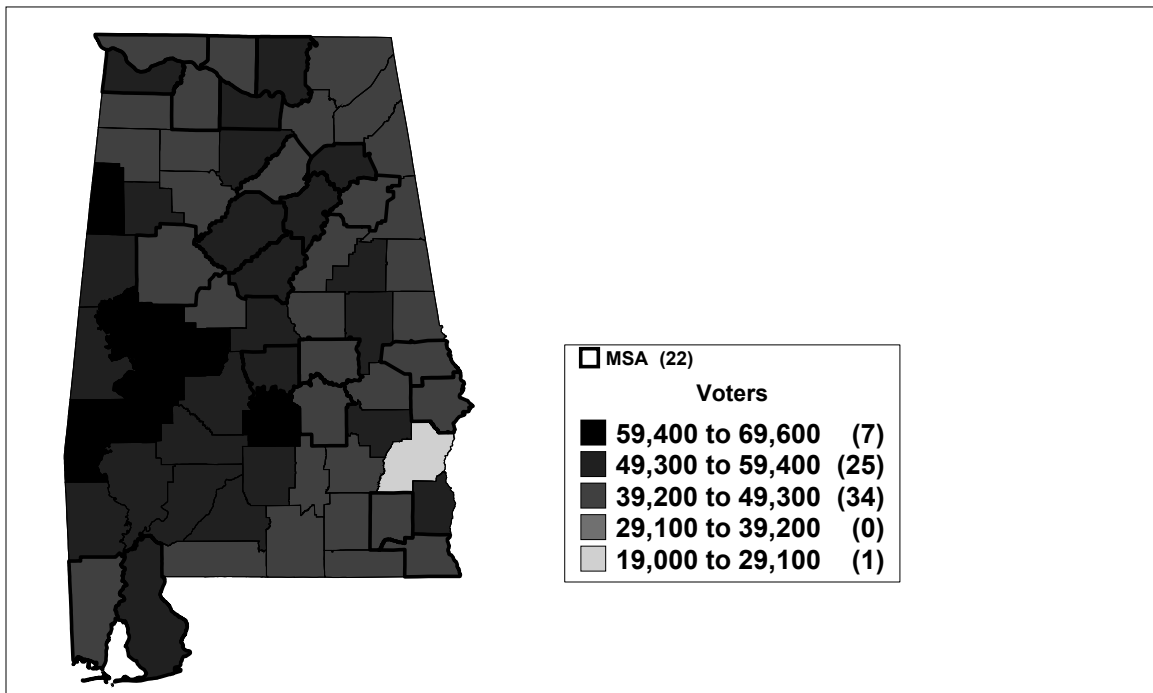
**Figure D-27. Juvenile Curfew, Vandalism, and Disorderly Arrests (Rate per 100,000 Juveniles)**



**Figure D-28. Juvenile Property Crime Arrests (Rate per 100,000 Juveniles)**



**Figure D-29. Property Crime Arrests for Juveniles Aged 10 to 14 (Rate per 100,000 Juveniles Aged 10 to 14)**



**Figure D-30. Voters (Rate per 100,000 Adults)**



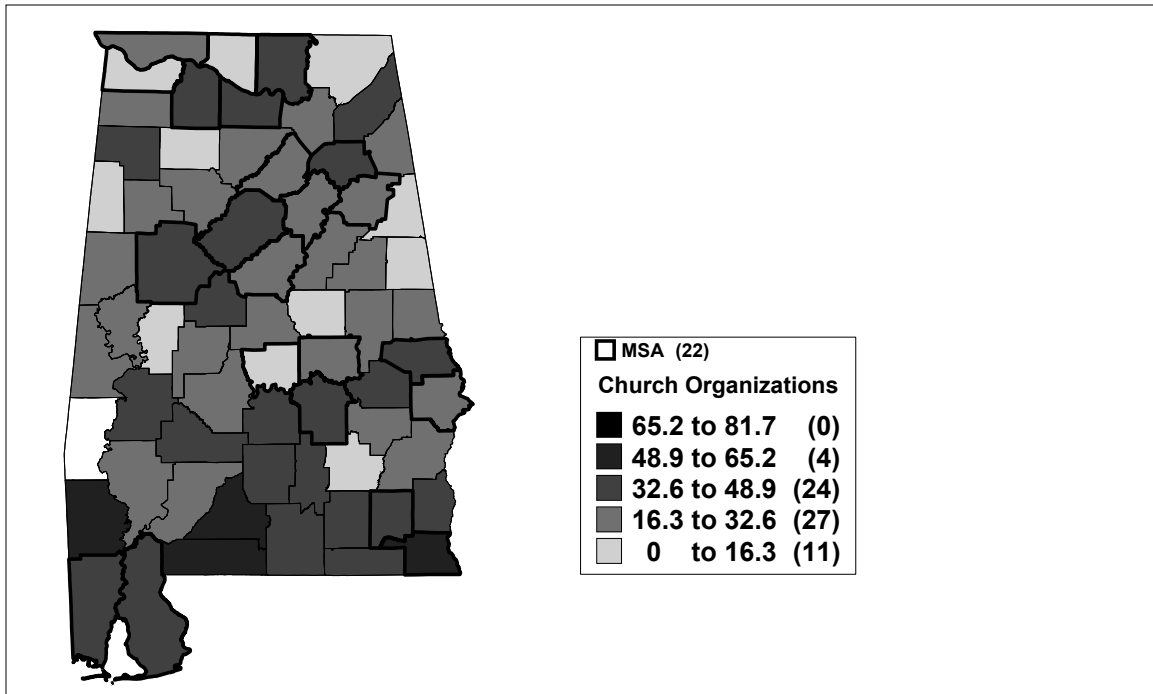


Figure D-31. Church Organizations (Rate per 100,000 People)

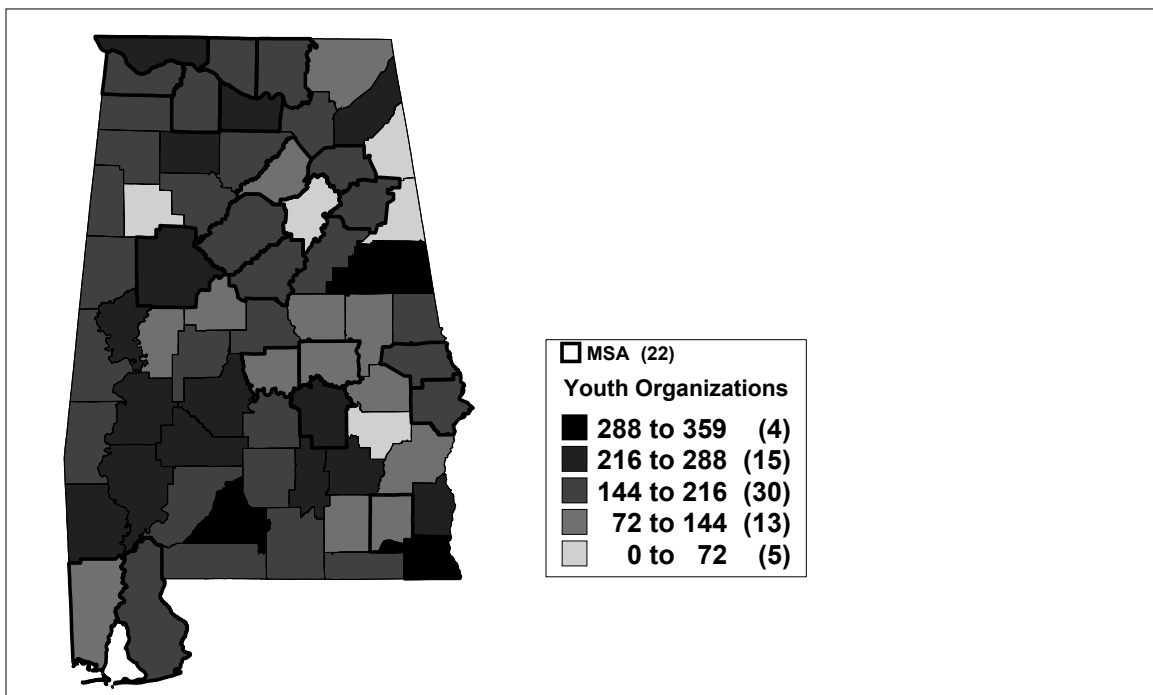


Figure D-32. Youth Organizations (Rate per 100,000 Youth)